# NAVAL POSTGRADUATE SCHOOL
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# THESIS

SCALABILITY STUDY OF WIRELESS TACTICAL
COMMUNICATIONS IN SUPPORT OF A MARINE CORPS
EXPEDITIONARY BRIGADE

by

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June 2000

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This thesis reports the findings of a simulation modeling the communications architecture used during Major System Demonstrations 1 (MSD-1) of the Extended Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) and a suitable architecture for a large-scale battlespace. The simulation was accomplished with the use of a leading edge simulation tool, EXTEND$^{TM}$, and the specifications inherent to wireless communications. Specifically, EXTEND was used to replicate the protocols that are inherent within the WaveLAN and VRC-99A systems. A feasible sized architecture was modeled utilizing scaling techniques, which simulated the operation of a Marine Expeditionary Brigade (MEB), covering a 200X200 mile wireless tactical battlespace. This thesis further investigates the validity of a completely wireless tactical network versus the additional use of ground relays. This thesis demonstrates that the wireless tactical battlespace is scalable to satisfy the requirements of a Marine Expeditionary Brigade. Lastly, this thesis demonstrates the effects of an all WaveLAN architecture.

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# SCALABILITY STUDY OF WIRELESS TACTICAL COMMUNICATIONS IN SUPPORT OF A MARINE CORPS EXPEDITIONARY BRIGADE

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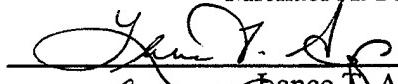
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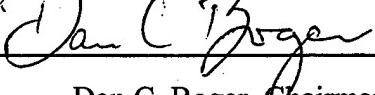
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## ABSTRACT

This thesis reports the findings of a simulation modeling the communications architecture used during Major System Demonstrations 1 (MSD-1) of the Extended Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) and a suitable architecture for a large-scale battlespace. The simulation was accomplished with the use of a leading edge simulation tool, EXTEND™, and the specifications inherent to wireless communications. Specifically, EXTEND was used to replicate the protocols that are inherent within the WaveLAN and VRC-99A systems. A feasible sized architecture was modeled utilizing scaling techniques, which simulated the operation of a Marine Expeditionary Brigade (MEB), covering a 200X200 mile wireless tactical battlespace. This thesis further investigates the validity of a completely wireless tactical network versus the additional use of ground relays. This thesis demonstrates that the wireless tactical battlespace is scalable to satisfy the requirements of a Marine Expeditionary Brigade. Lastly, this thesis demonstrates the effects of an all WaveLAN architecture.

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# TABLE OF CONTENTS

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# LIST OF FIGURES

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# LIST OF TABLES

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# EXECUTIVE SUMMARY

The future battlespace of the warfighter, as envisioned within the Joint Vision 2010 doctrine, is highly mobile, with communication needs not currently met. The Extending the Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) is a joint demonstration that supports key elements of Joint Vision 2010. Additionally, the Defense Science Board's 1996 Summer Study, "Tactics and Technology for 21st Century Military Superiority", concluded that emerging technology is the key to integrated communications, command, control, sensors, fires, and targeting capability. The ELB concept will enable expeditionary force operations in an extended littoral battlespace by providing joint maritime units with the means for rapid employment of forces, maneuver, and fire support from the sea

In the spring of 1999, the Navy and Marine Corps conducted the ELB ACTD Major System Demonstration-1 (MSD-1), which utilized a wide-area wireless battle network (WARNET) that was implemented using WaveLAN and VRC-99A technologies. The objective was to provide for mobile over-the-horizon C4I, with large bandwidth characteristics, down to the smallest unit without relying on tactical-satellite communications. The purpose of the MSD-1 was to prove in principle that a wireless tactical communications network was deployable without the use of permanent ground relay stations or satellites.

Wireless Local Area Networks (WLANs) are very resilient in that they can be built from small workgroup-like networks, to full scale Internets tied into a wired infrastructure network. Network nodes found in ELB ACTD MSD-1 were small groups of End User Terminals communicating through Access Points. Since the ELB units vary in size, WLANs are perfect for matching a topology to the application. [Ref 6]

Lucent Technology's WaveLAN networking products were used as the primary communications devices for the ELB demonstrations and will continue to be used for MSD-2. Specifically, the End User Terminals (EUT), small portable personal computers attached to an individual's waist, were given to individual Marines dispersed throughout the theatre of operations, while Access Points (AP) were strategically placed in aircraft, on High Mobility Multipurpose Wheeled Vehicles (HMMWV), and with truck vehicles, thus providing opportunity for mobility. Additionally, the Marconi Aerospace AN/VRC-99A radio was the principal radio for supporting the long-range links. High Mobility Multipurpose Wheeled Vehicles (HMMWV) Command and Control Variant (CCV), Amphibious Assault Vehicles (AAV) CCV, and the airborne relays were configured with the AN/VRC-99A.

The primary research objective of this thesis was to determine the infrastructure needed to support a wireless communications capability for a Marine Corps Expeditionary Brigade. The authors constructed a model in simulation software known as EXTEND. Each element of the WaveLAN had to be constructed utilizing a wireless protocol adhering to the IEEE 802.11 wireless standard. After completion of a smaller model for validation purposes, the final model was constructed and tested. The final

results of the simulation show that the scaling of the wireless communications architecture to a size comparable to that of a Marine Expeditionary Brigade resulted in no significant increase in delay. However, it does show that there is a decrease in performance when VTC is employed.

A subsidiary research objective was to determine the possibility of constructing wireless communications architecture using solely WaveLAN and WaveLAN-like technologies. Two more models were constructed. The first model included all of the components of the previous models, e.g., Access Points, End User Terminals and VRC-99A radios. The second model consisted of only WaveLAN components (no VRC-99A radios). Each was tested with identical message loading and the delays were measured. The data does in fact suggest that an all-WaveLAN architecture is possible. However, it should also be noted that it would take a considerable amount of extra radio assets to fill the role of a retransmission site, as well as extra personnel and logistics to support such an operation.

It is only logical that the military is seeking to exploit commercial technology to facilitate communications in the littoral battlespace. Wireless communications offer a means to communicate using the latest technology available. It is scalable and upgradeable. It allows the military to maintain a robust means of communication within a littoral environment. While there are still issues that must be resolved before utilizing this technology, e.g., security, wireless remains a viable option to facilitate Ship-to-Objective Maneuver.

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# I. INTRODUCTION

## A.     PURPOSE

The purpose of this thesis is to model the communications architecture employed in the Extended Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) Major Systems Demonstration 1 (MSD-1) and scale the architecture in order to effectively support a larger operational-sized force. This thesis utilized Imagine That, Inc.'s Extend™ simulation software and studied the wireless technologies associated with this demonstration. Secondly, this thesis investigated the quality of service associated with a Wireless Wide Area Battlenet (WARNET) comprised entirely of WaveLAN or WaveLAN-like technologies.

## B.     BACKGROUND

The future battlespace of the warfighter, as envisioned within the Joint Vision 2010 doctrine, is highly mobile, with communication needs not currently met. The warfighter in a joint maritime environment will adhere to four primary doctrines, Joint Vision 2010, Operational Maneuver From The Sea (OMFTS), Forward...From The Sea, and Network Centric Warfare. Joint Vision 2010 is founded upon four primary pillars, dominant maneuver, focused logistics, full dimension protection, and precision engagement. Within Operational Maneuver From The Sea, there exists the need for continued communication links amongst those forces operating in this joint environment.

The Extending the Littoral Battlespace (ELB) Advanced Concept Technology Demonstration (ACTD) is a joint demonstration that supports key elements of Joint Vision 2010. Additionally, the Defense Science Board's 1996 Summer Study; "Tactics and Technology for 21st Century Military Superiority", concluded that emerging technology is the key to integrated communications, command, control, sensors, fires, and targeting capability. The ELB concept will enable expeditionary force operations in an extended littoral battlespace by providing joint maritime units with the means for rapid employment of forces, maneuver, and fire support from the sea. The ELB ACTD, sponsored by the Commander in Chief, U.S. Pacific Command (USCINCPAC), seeks to demonstrate and assess the military utility of communication technology and procedures that enable seamless operations by joint expeditionary forces in the world's littoral areas. [Ref 1]

In the spring of 1999, the Navy and Marine Corps conducted the ELB ACTD MSD-1, which utilized a wide-area wireless battle network (WARNET) that was implemented using WaveLAN and VRC-99A technologies. The objective was to provide for mobile over-the-horizon C4I, with large bandwidth characteristics, down to the smallest unit without relying on tactical-satellite communications. The purpose of the MSD-1 was to prove in principle that a wireless tactical communications network was deployable without the use of permanent ground relay stations or satellites.

## C.    RESEARCH OBJECTIVES

The primary research objective is to determine the infrastructure needed to support a wireless communications capability for a Marine Corps Expeditionary Brigade. A

subsidiary research objective is to determine the possibility of constructing a wireless communications architecture using solely WaveLAN and WaveLAN-like technologies (no VRC-99A or similar radio).

## D.  THESIS OUTLINE

The background information pertaining to the Extended Littoral Battlespace (ELB) and the relevant factors involved in a WARNET are included in Chapter II.  Also in Chapter II are the descriptions of the modeling hardware and software environment. Simulation of the Major System Demonstration 1 (MSD-1) along with the decomposition of the problems and issues regarding the modeling of this network are included in Chapter III.  Included in Chapter IV is the scaled simulation model matching a Marine Expeditionary Brigade (MEB) sized force in a tactical battlespace both inclusively and exclusively utilizing wireless technology, specifically WaveLAN technology.  Chapter V provides a detailed analysis of the simulation model, in particular its validity in respect to an Extended Littoral Battlespace meeting the warfighter's tactical needs of quality of service, access, etc.  The final conclusions and recommendations are also included in Chapter V.

## E.  EXPECTED BENEFITS OF THIS THESIS

This thesis will become the foundation for wireless technology studies in a tactical environment.  Additionally, the simulation model will be utilized for follow on theses in the area of Combat Identification Network infrastructure.

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## II. ARCHITECTURE AND EQUIPMENT

## A. LITERATURE REVIEW OF THE LITTORALS AND EXTENDING THE LITTORAL BATTLESPACE

The future warfare environment for the United States Navy and the United States Marine Corps is envisioned to be drastically different than today's environment due to the diverse threats arising in littoral regions and the requirement to operate within them. Based on doctrinal literature such as Joint Vision 2010, Naval Warfare will utilize littoral regions for both naval superiority and operational maneuver from the sea. Joint Vision 2010's innovative approach to an integrated Sea/Shore force is fueled by emerging technologies and the opportunities they create. The following is the operational doctrine, which enables the Extending of the Littoral Battlespace.

### 1. Joint Vision 2010

Determining a common vision for the strategic environment is the key to the Department of Defense's success in the 21$^{st}$ century, specifically during the first decade. Just as the business world uses a common vision to stretch the imagination of a corporation, Joint Vision 2010 attempts to stretch the imagination of all warfighters. There is currently no monolithic enemy to match strategic, operational and tactical doctrine against. In a world of international economy and geopolitical change, the Department of Defense must be prepared for drastic changes in it's strategic environment. By embracing change and innovations in technology, the DoD will remain on the cutting edge, and Joint Vision 2010 is the vehicle to support this evolution in warfare. Joint Vision 2010 provides

a template to channel the collective efforts of the Armed Forces. The armed forces are entering a strategic environment rich with joint operations and the need for joint tactical coordination. [Ref 2]

The Marine Corps view of the future strategic environment reveals both danger and opportunity. Danger – chaos in the littorals – is characterized by myriad clashes of national aspirations, religious intolerance, and ethnic hatred. Opportunity emanates from advances in information management, battlefield mobility, and the lethality of conventional weaponry. Such changes in the operational environment, representing both new threats and enhanced capabilities, raise many questions. [Ref 2] Joint Vision 2010 works in concert with Operational Maneuver From the Sea (published doctrine building on the foundation of the white papers "...From the Sea" and "Forward...From the Sea"). The pillars of Joint Vision 2010, dominant maneuver, precision engagement, full dimensional protection and focused logistics, along with information superiority and the end state of full spectrum dominance are defined in the Joint Force Quarterly (Winter 1998) as follows:

Dominant Maneuver – the multidimensional application of information, engagement, and mobility capabilities to position and employ widely dispersed joint air, land, sea, and space forces to accomplish the assigned operational tasks.

Precision Engagement – a system of systems that enables our forces to locate the objective or target, provide responsive C2, generate the desired effect, assess our level of success and retain the flexibility to reengage with precision when required.

Full Dimension Protection – to ensure our forces can maintain freedom of action during deployment, maneuver, and engagement while providing multi-layered defenses for our forces and facilities at all levels.

Focused Logistics – the fusion of information, logistics, and transportation technologies to provide rapid crisis response, track and shift assets even while en route, and deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level of operations.

Information Superiority – the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.

Full Spectrum Dominance – this is the ultimate objective of Joint Vision 2010, to be preeminent in any form of conflict.

These concepts are the architecture of Joint Vision 2010 and are intertwined with Operational Maneuver From the Sea. The Extending the Littoral Battlespace ACTD seeks to support the requirements of Joint Vision 2010, specifically the pillars discussed above.

## 2. Operational Maneuver from the Sea (OMFTS)

In the White Papers "...*From the Sea*" and "*Forward...From the Sea*", the Navy and Marine Corps presented a common vision for a future in which skillfully handled naval forces would enable the United States to exert its influence in the littoral regions of the world. Building upon the foundation laid by those papers, *Operational Maneuver from the Sea* (OMFTS) deals explicitly with the full spectrum of challenges that we will have to face, the dangers and opportunities created by new technologies, and the very prospect of adapting the tradition of maneuver warfare, not merely to amphibious operations, but to all aspects of warfare in, and around, coastal waters. [Ref 3]

7

The principles of OMFTS, which are the driving force for future engagements in littoral regions, are listed in the table below:

- Focus on an operational objective
- Use the sea as maneuver space
- Generate overwhelming tempo and momentum
- Pit strength against weakness
- Emphasize intelligence, deceptions, and flexibility
- Integrate all organic, joint, and combined assets

Table 1. Principles of Operational Maneuver from the Sea

There is no single answer to future challenges in the strategic environment, although Operational Maneuver is applicable over a range of requirements. [Ref 2] The following are the concepts found within Joint Vision 2010 and their relationship to Operational Maneuver as discussed in the Joint Force Quarterly (Winter 1998).

Dominant Maneuver – the application or decisive force to attack enemy centers of gravity at all levels and compel an adversary to either react from a position of disadvantage or quit.

Precision Engagement – provides for a wide array of engagement options for joint force commanders including non-lethal technology for use when less than deadly force is desirable.

Full Dimension Protection – preservation of freedom of action and, by layering air, surface, and subsurface defenses, which affords "full dimensional" defense.

Focused Logistics – the option to remain sea based or buildup support ashore gives Joint Task Force commanders the means to ensure the efficiency, security, and timeliness of Combat Service Support, "right time, right place".

Information Superiority – stresses the need to acquire, maintain, and exploit information and deal with uncertainty. There is a central difference between JV 2010 and Operation Maneuver From the Sea (OMFTS) when addressing information superiority. OMFTS characterizes the operational environment as a dynamic, fluid situation. An important piece of information superiority is the warfighter's cognitive abilities to produce

8

superiority not just simply software and hardware. JV 2010 places less emphasis on the human dimension of information superiority than does OMFTS.

### 3. The Extended Littoral Battlespace

The concept of Extending the Littoral Battlespace (ELB) incorporates the concepts of Operational Maneuver from the Sea, and Joint Vision 2010. The Office of Naval Research (ONR) established the Advanced Concepts Technology Demonstrations (ACTD) for ELB from a Broad Agency Announcement dated May 7, 1997. The Office of Naval Research and the Marine Corps Combat Development Command jointly manage the program. The Commander in Chief, United States Pacific Command (USCINCPAC) is the operational sponsor. The primary objective of Advanced Concept Technology Demonstrations is to accelerate and facilitate the application of mature technologies to solve important military problems. There is a need to extend the littoral battlespace. The ELB ACTD seeks to fulfill this need using a command and control architecture in a manner that can be assessed and adheres to OMFTS and Joint Vision 2010 concepts. Desired operational capabilities of a littoral battlespace command and control system include a reliable, high bandwidth, wireless, wide-area network that extends communications beyond line of sight (LOS) without depending on satellites or ground relay stations. [Ref 1]

The foundation of the Extended Littoral Battlespace (ACTD) is firmly grounded within the Ship-to-Object Maneuver (STOM) concept as well as the CINC's Guidance. The CINC's Guidance consists of a Working CINC's Intent, five Critical Operational Issues (COI), and a CINC long-range vision statement.

STOM entails an attack by combat forces through the littorals at the time and place that best supports the joint force's primary objectives. The principles of this concept apply equally to the execution of all amphibious forcible entry operations, whether conducted as operational maritime maneuver, as tactical level support of sustained operations ashore, or as part of the myriad of activities conducted during other expeditionary operations. [Ref 3] STOM is a new tactical idea that will seek to continue the momentum gained by maneuver at sea, without break or self imposed delay. [Ref 3] WARNET technologies, coupled with appropriate Command and Control applications, are primary enablers for full empowerment of STOM at the tactical level of operations. This is the primary focus of MSD-1. Empowerment of STOM operations will further enable OMFTS at the operational level. These, in turn, will provide for greatly enhanced Joint Task Force combat capabilities by facilitating the extension of the littoral battlespace and providing seamless maneuver over the horizon directly against objectives deep inland. [Ref 1] Figure 1 illustrates OMFTS and Maneuver Warfare and how they are the both instrumental in the STOM framework.

| OPERATIONAL MANEUVER FROM THE SEA | MANEUVER WARFARE |
|---|---|
| • Focus on the Operational Objective<br>• Treat the Sea as Maneuver Space<br>• Create Overwhelming Tempo and Momentum<br>• Apply Strength Against Weakness<br>• Emphasize Intelligence, Deception, and Flexibility<br>• Increase Organic, Joint, and Combined Assets | • Surprise<br>• Focus<br>• Speed<br>• Lethality<br>• Flexibility<br>• Audacity<br>• Mission Orders |

**SHIP-TO-OBJECTIVE MANEUVER**

- Control Tempo/Overwhelm Adversary
- Combined Arms Maneuver from OTH
- Dilute the Enemy by Enlarging Battlespace
- Control Vital Area by Fighting Outside It
- Maneuver to Cause an Exploitable Reaction

Figure 1. Ship-to-Objective Maneuver

STOM applies the principles and tactics of maneuver warfare and OMFTS, while emphasizing sea-based command and control, logistics, and fire support. Improved information connectivity allows the landing force command element to remain at sea, capable of effective command, but better protected from enemy attack. [Ref 3]

STOM is enabled with information superiority, largely due to continuous information connectivity and fundamental information superiority, which in turn can lead to full spectrum dominance. This information superiority is accomplished by quicker decision and execution cycles and is the raw material of decision making and execution. Pertinent information, disseminated throughout the battlespace, specifically to the commander's in theatre, develops more effective and efficient orientation and decision phases of the decision and execution cycle. Execution information is also formulated and acted upon more efficiently with extended, continuous communication in the battlespace.

The Working CINC's Intent provides the operational perspective for the overall assessment effort during the ACTD. [Ref 1] Table 2 below depicts the accomplishments of the Working CINC's Intent and the dynamic nature it involves:

| Working CINC's Intent |
| --- |
| • Enhance the "Joint Task Force (JTF) From The Sea" by fully integrating and fusing the Unified Command and JTF headquarters and joint force component command's capabilities to address the four fundamental concepts of Joint Vision 2010 (dominant maneuver, precision engagement, focused logistics, and full dimensional protection). |
| • Provide for significant increases in the effectiveness of the JTF while decreasing its vulnerabilities. Leverage information superiority and technological innovation by focusing upon joint interoperability and integration of enhanced C4I, targeting, fires, sensors, and rapid employment of joint forces from the sea operating within an extended littoral battlespace. |
| • Assessments of military utility will be driven by "component commander" input and operational assessments within realistic but controlled battlespace environments. |

Table 2. Working CINC's Intent

The value of understanding how ELB technologies contribute to the Working CINC's Intent will be addressed in the final military utility assessment report at the end of the ACTD (FY01) and therefore was not a primary focus area during MSD-1.

Also part of the CINC's guidance are the five Critical Operational Issues (COIs) for

the ELB ACTD determined by USCINCPAC, they are identified in Table 3 below. [Ref

4]

- Can ELB technologies greatly expand the JTF/naval forces' capabilities to conduct over-the-horizon collaborative planning and coordination that integrates all necessary elements into a seamless environment (network)?
- Can a deployed Commander, Joint Task Force (CJTF), through enhanced situational understanding and unprecedented battlespace dominance, exercise command and control over disaggregated joint and/or combined early entry forces to shape and control the littoral area in ways not possible today?
- Can an embarked, dispersed task force staff provide sufficient real-time information to dramatically increase early entry force effectiveness while reducing force vulnerability?
- Can an afloat joint task force provide sufficient massed fire support to early entry forces to fulfill the requirements of over-the-horizon calls for fire?
- Can early entry expeditionary forces, through the application of advanced technology and concepts, rapidly prepare the battlefield for movement of command and control ashore and the transition to follow-on forces?

Table 3. ELB Critical Operational Issues

Found within USCINCPAC's guidance for the MSD-1, are the MSD-1's Eight

Core Assessment Areas & the Overarching Assessment Area. They are listed below. The

eight areas are grouped into the transport and application functional areas that enable the

information, sensor and fire grids, which in turn enable the JV2010 concept of Information

Superiority.

13

The eight core areas are:

- Transport

    o Wireless Wide Area Networking (WARNET)
    o Voice-Over-Data
- Application
    o Situational Awareness
    o Collaborative Planning
    o Engagement Coordination
    o Distributed C2
    o On-the-Move C2
    o Small Unit Leader & Individual C2

### a. Objectives

The objective of the ELB ACTD is to demonstrate the military utility of OMFTS, on an Extended Littoral Battlefield, which is enabled by, advanced technologies. [Ref 4] The eight core assessment objectives will be evaluated for the military utility. The vision of Network Centric Warfare in which operational advantage is achieved from a strong networking of a well informed but geographically dispersed force was embraced in the architecture. An Amphibious Readiness Group (ARG)/Marine Expeditionary Unit (MEU) size force, comprising of five to ten ships, thirty armored vehicles, thirty fixed/rotary wing aircraft, and two thousand Marines will be used for the modeling effort. The capabilities must be scalable up to a Marine Expeditionary Brigade (MEB). [Ref 1]

The ELB ACTD MSD-1 took place in April 1999 off the coast of San Diego, California. An objective of this ACTD was to demonstrate a wireless communications system that integrated the core capabilities of Command, Control,

14

Sensing, Fires and Targeting. A requirement was that the system must demonstrate its overall military utility and display a user-friendly operating environment. ELB ACTD MSD-2 will build upon the results and developments of ACTD MSD-1. [Ref 1]

### b. Concept of Operations for Network Support

The ELB demonstration utilized the operational concepts found within the Operational Maneuver from the Sea and Ship-to-Objective Maneuver doctrines. The demonstrations sought to create a continuous command and control communications architecture from ship-to-shore, ship-to-objective and beyond. By continuous communications, the Joint Task Force commander will maintain information superiority. Information flows will be continuous and real time. The demonstration employed wireless technology, specifically wireless networking from ship-to-shore and ship-to-Marine, via airborne relays. The relay platforms chosen for the demonstration were two Navy P-3s and a commercial Crownair aircraft; however, for an operational system other platforms including helicopters and high altitude Unmanned Aerial Vehicles (UAVs) were also considered. Figure 2 depicts the communication network that was utilized. [Ref 1]
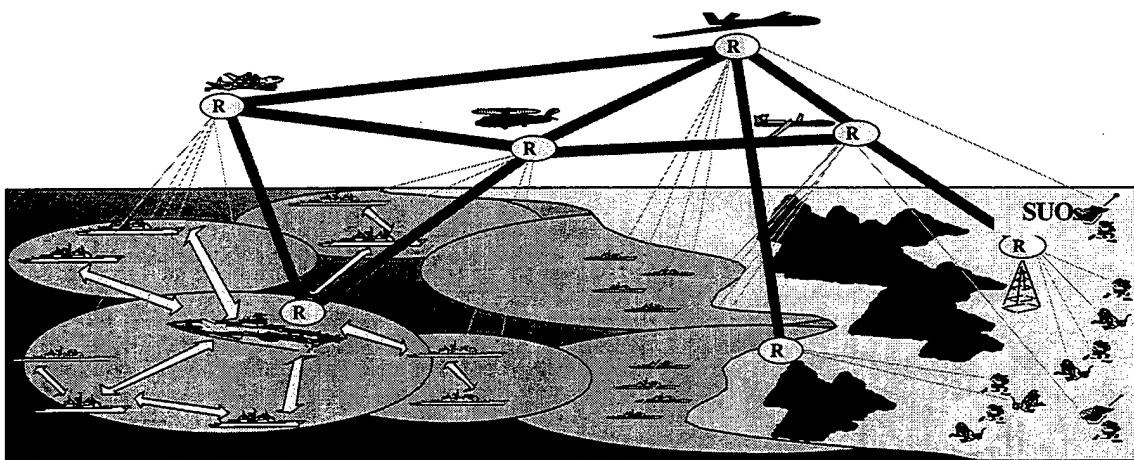


Figure 2. Communication Network for ELB (R-Routing)

### c. Wireless Networking Objective

The communication objective for the ELB ACTD MSD-1 was to provide the wireless communication network required to support operational forces in theatre. Based on the principles of a highly dynamic, multiple node force, the wireless network model must take on the characteristics of a mobile force and introduce mobility within the communications network. This calls for the use of nodal network models built on a dynamic topology. There should be dynamic addressing of nodes within the network to ensure constant communications in order to gain and maintain both momentum and information superiority. End User Terminals (EUT) will not be fixed to a specific Access Point (AP), instead, the dynamic addressing scheme will allow the EUT's to roam throughout the battlespace and be passed on from Access Point to Access Point as required in order to maintain connectivity. Thus a EUT will maintain addressing throughout the battlespace. The desired qualities of the MSD-1 wireless network are identified in Table 4. [Ref 1]

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- Ability to support point-to-point, multicast, and broadcast packet-switched communications among large and small capacity users over distances up to three hundred miles.
- Ability to support point-to-point and group voice service across the entire extended battle space.
- Ability to include service to Marines and dismounted soldiers with battery-powered radios and computers at rates of at least 64 kilobits per second (Kbps).
- Ability to include service to large users at rates up to 1.5 Megabits per second (Mbps).
- Ability to automatically configure and reconfigure the network topology and routing/switching databases as both users and airborne platforms move.

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Table 4. Desired Qualities of the MSD-1 Wireless Network

16

The network must also be capable of supporting numerous computer applications such as e-mail, file and image transfer, web browsing, interactive white-board, and collaborative voice. Video teleconferencing is also desired among major platforms. [Ref 1] The basic service will be provided by connectionless datagrams. Where needed, reliable link and end-to-end services will be achieved by protocol overlays. Desired data rates were estimated to be 1.5 Mbps between major platforms and 64 Kbps to the dismounted warrior. [Ref 1]

## B.     EXTENDED LITTORAL BATTLESPACE ACTD SYSTEMS

### 1. BENEFITS OF WIRELESS TECHNOLOGY

#### a. Mobility

The ELB demonstration utilized a highly mobile fighting force that must be able to communicate with its units while static or on the move. A Wireless LAN can provide access to real-time information for those units or individuals that cannot be hard-wired to a network. [Ref 6]

#### b. Installation Speed and Simplicity

ELB demonstration units cannot afford to spend the time, nor is it operationally feasible, to lay networking cable while in the field. Installing a WLAN can be quick and easy and allow these units the flexibility of taking the network wherever they go. [Ref 6]

17

## c. Scalability

WLANs are very resilient in that they can be built from small workgroup-like networks, Access Points, to full scale Internets tied into a wired infrastructure network. Network nodes found in ELB ACTD MSD-1 were small groups of End User Terminals communicating through Access Points. Since the ELB units vary in size, WLANs are perfect for matching a topology to the application. [Ref 6]

## 2. WAVELAN SYSTEMS

Lucent Technology's WaveLAN networking products were used as the primary communications devices for the ELB demonstrations and will continue to be used for MSD-2. Specifically, the End User Terminals (EUT), small portable personal computers attached to an individual's waist, were given to individual Marines dispersed throughout the theatre of operations, while Access Points (AP) were strategically placed in aircraft, on High Mobility Multipurpose Wheeled Vehicles (HMMWV), and on truck vehicles, thus providing opportunity for mobility. Additionally, the Marconi Aerospace AN/VRC-99A radio was the principal radio for supporting the long-range links. High Mobility Multipurpose Wheeled Vehicles (HMMWV) Command and Control Variant (CCV), Amphibious Assault Vehicles (AAV) CCV, and the airborne relays were configured with the AN/VRC-99A. The primary components of the Wireless Wide Area Battlenet (WARNET) are identified in Table 5. [Ref 7] Each of these systems is discussed in detail in the following sections

- WaveLAN II wireless cards in any computer, such as the End User Terminal (EUT) or a desktop version.
- WavePOINT wireless Access Points connected to ground, air, and sea network routers.
- AN/VRC-99A network radios to provide ground, air, and sea Access Points for VRC radio nets and connection to network routers.

Table 5. Components of the WARNET

### a. WaveLAN/Wireless LAN Protocol IEEE 802.11

WaveLAN is a wireless system that offers end users connectivity to network services supporting voice, data, and message traffic. WaveLAN creates an opportunity to explore wireless communications in a tactical environment that has the potential for a more secure (LPI/LPD) link than that found in the current communications architecture due to Direct Sequence Spread Spectrum (DSSS). The latest WaveLAN product, known as WaveLAN/IEEE 802.11 provides a wireless network interface to any computer via an ISA card or a PCMCIA card. WaveLAN meets the Institute of Electrical and Electronic Engineers (IEEE) 802.11 standard. This standard, although relatively new, is the driving force behind interoperability in a wireless network scheme. WaveLAN/IEEE cards have a pair of antennas embedded directly into the card and have a miniature connector to allow substitution of external main (transmit/receive) and auxiliary (receive only) antennas. The extended ranges associated with the ELB ACTD required WaveLAN to be modified to apply a higher power gain to the antenna. Figure 3 is a WaveLAN card. [Ref 7]
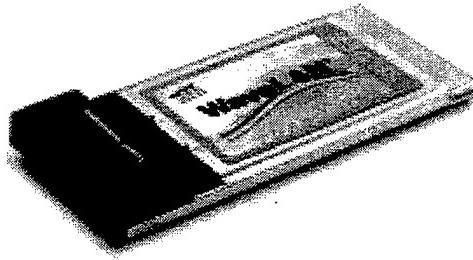
Figure 3. WaveLAN Card

WaveLAN utilizes DSSS technology, which broadens the signaling band by artificially increasing the modulation rate using a spreading code, to meet the regulations for unlicensed use in the Industrial, Scientific, and Medical (ISM) frequency band at 2.4 GHz. WaveLAN products use differential quadrature phase shift keying (DQPSK) modulation, which is also included in the IEEE 802.11 standard. The channel access protocol for WaveLAN/IEEE is Carrier Sense, Multiple Access with Collision Avoidance (CSMA/CA) as specified by IEEE 802.11. [Ref 7] Within a single channel, all WaveLAN participants share the channel by the CSMA time-sharing process. WaveLAN has no hard limit on the number of nodes that can share a single channel. If more than one transmitter is active at any one time, a collision will occur and a retransmission will be required. Multiple computers can exchange data in a wireless local area network by employing a WaveLAN interface card at each computer. Using the IEEE 802.11 CSMA/CA protocol, the exchange is very analogous to an Ethernet in a wireless environment. [Ref 7] A transmission by any one unit is expected to be received by all other units. This supports both collision avoidance and broadcast.

The introduction of mobility, however, generates a problem. When a node moves out of communication from the other nodes, both the broadcast and collision avoidance properties fail to be satisfied across the entire LAN, creating a "hidden node". [Ref 1] A "hidden node" is created when two terminals are communicating with the same terminal causing a collision because they are unable to detect one another. A solution to this mobility problem is to use a WaveLAN access point operating under the Request-to-Send/Clear-to-Send (RTS/CTS) protocol. RTS/CTS guarantees a quality of service through eliminating lost messages as a result of "hidden node" collisions. [Ref 7] The CSMA/CA protocol is still used to control the RTS and CTS messages. The RTS/CTS protocol was used for the ELB ACTD.

The current WaveLAN card supports three data rates: 1 Mbps, 2 Mbps and 11 Mbps. [Ref 7] Each WaveLAN link senses existing error statistics and adjusts its data rate to one of the available rates. All signaling is done at the 1 Mbps rate so that headers can be read without dependence on data rate. [Ref 7]

### b. WaveLAN Access Points

WavePoint II Access Point is a wireless LAN product utilized in the WaveLAN network. WavePoint is a small, compact, wireless-to-wireless and wireless-to-ethernet bridge. A WavePoint is normally used to provide connectivity between a wired or fiber network and one or more WaveLAN wireless interface units. [Ref 7] It provides two wireless WaveLAN interfaces and an Ethernet interface. WavePoint provides easy network access to mobile users and difficult to wire locations, such as the tactical

environment. When a WavePoint is used with two wireless interfaces, the interfaces are usually operated in maximally separated RF bands, and the antennas are separated to achieve as much isolation as possible. Ordinarily the Ethernet interface is used to interconnect multiple access points. However, one of the wireless interfaces can be used on each access point to provide wireless network connectivity among multiple access points and enable a wireless backbone, allowing extension of the wireless network. [Ref 7] WavePoint provides network access and extended Over-the-Horizon (OTH) coverage by daisy chaining access points. The ELB ACTD used this mode. Figure 4 is a WavePoint. [Ref 1]
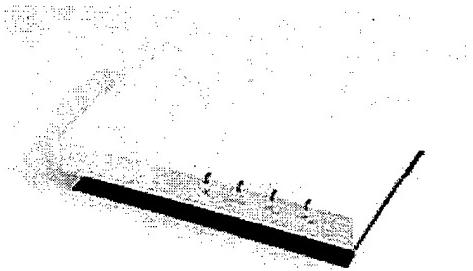


Figure 4. WavePoint

### c. AN/VRC-99A

The VRC-99A is an L-Band programmable communications transceiver that provides wireless LAN service for line-of-site (LOS) data and/or voice links. [Ref 8]. It is a Marconi Aerospace product and operates in the 1300-1500 MHz frequency range. The AN/VRC-99A is a programmable communications system that can provide virtual connectivity and data gram service guaranteeing reliable, simultaneous, multichannel voice, data, image and video transmission. [Ref 8] It can be mounted in ground,

22

vehicular, shipboard and airborne configurations. [Ref 8] The VRC-99A provides asynchronous and synchronous type interfaces including an 802.3 Ethernet with up to 10 Mbps throughput for use within the WARNET. It uses a specialized direct sequence, spread spectrum technique that provides low probability of intercept/anti-jamming (LPI/AJ) capabilities and has an embedded Type 1 encryption feature. [Ref 8] This radio can support a number of channel access techniques to include Code Division Multiple Access (CDMA), Frequency Division Multiple Access (FDMA) and Time Division Multiple Access (TDMA). [Ref 8]

With TDMA, each radio transmits a short burst of a digitally modulated carrier during a precise time slot (epoch). Each station's burst is synchronized so that it arrives at its destination at a different time, thus, avoiding a collision with another station's carrier. TDMA was the only technique used for the ELB MSD-1.



Figure 5. AN/VRC-99A

23
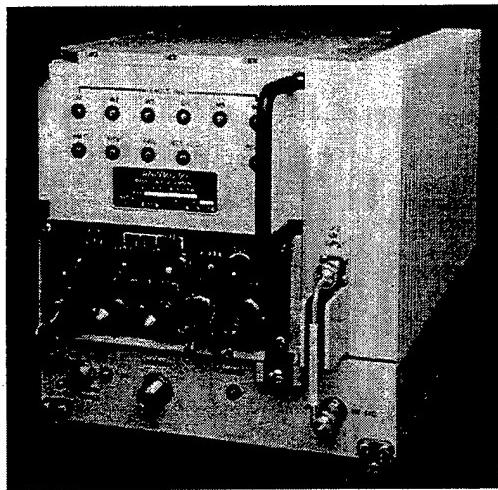
The VRC-99A was used as the backbone for long distance communications within the ELB ACTD MSD-1. Adaptive routing inherent within the system provides for network survivability and dynamic mobile applications. [Ref 8] A summary list of the key planning strengths and limitations as identified by the ELB ACTD MSD-1 *Assessment Final Report* were:

- 16 radio limit per net.

- 23 slots limit per net – there is a trade-off between the number of radios that can be employed as part of the net the bandwidth available because there are only 23 time slots that can be used.

- Multiple nets per location.

- Adaptive routing.

- 5-10 minutes reconfiguration period. (Some reconfiguration could be done remotely using TelNet, and some required on scene operators.)

- Radio time of day must be set manually within 90 seconds for all radios on the network.

- One radio dropping out of the network does not affect the rest of the network unless it was relaying network traffic to radios that are otherwise out of the network.

- The total number of radios must be programmed into each radio manually. All radios need not be on.

- At least one time slot must be allocated per radio for it to enter the network. Additional time slots can be dynamically reallocated remotely.

- Routers use static routing tables.

It should be noted that this information is given to the reader simply to illustrate the robustness of the VRC-99A as well as give a basic knowledge of operation. This thesis will focus primarily on the WaveLAN 802.11 protocol used in conjunction with the VRC-99A. [Ref 1]

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**CHAPTER III WAS COMPLETED IN CONCERT WITH CAPTAIN KEVIN STEWART'S THESIS REGARDING COMBAT IDENTIFICATION**

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# III. NETWORK MODELING AND SIMULATION

## A.    MODELING AND SIMULATION

This chapter explores the use of modeling and simulation as a tool in understanding and evaluating the network architecture utilized in the ELB demonstration. It must be noted that it was the authors original intent to model what took place within MSD-1 and then validate the model with the actual data produced during the exercise. However, this would not be the case. Although the architecture could be readily reproduced, the data for comparison was not accessible. Much effort went into obtaining such data but to no avail. After several months, the Technical Director of the ELB ACTD acknowledged that the data would probably be insufficient for our cause. This left the authors with validating the model using a common approach of measuring delay equal to the bandwidth divided by the message size. Two models have been developed and tested using a PC based, object oriented modeling and simulation tool called Extend ™ developed by Imagine That, Incorporated. Extend is an easy to use graphical simulation tool that allows a user to model complex discrete or continuous systems while varying performance parameters. [Ref 9].

The application centers on standardized libraries of process objects, referred to as blocks. It is designed to be a user friendly way to facilitate the rapid development of simulation models of queuing systems by dragging and dropping blocks from the library to the model workspace. Models can be built to simulate continuous flow problems or discrete events. The different libraries that are built into the application are generally

29

designed specifically for one or the other, however, many objects within the libraries are interchangeable with either type of model. [Ref 9]

The two main types of blocks are item blocks and attribute blocks. Item blocks receive and process discrete events or items that pass through them. Attribute blocks receive and process attribute values associated with items, although the items do not specifically transit through these blocks. The flow of the model is determined by the order of the connections between blocks of the model. [Ref 9] The figures within this chapter show the blocks and connectors the authors used for the modeling and simulation. Blocks can be grouped together as a hierarchical block and represented as a custom block in the model workspace. Complex models can be condensed at the highest level into a readily understandable design. All of the structure with the modeling of the wireless network is hierarchical, blocks are contained within higher level blocks. [Ref 9] Appendix A contains each major block utilized for the modeling and simulation along with the heirarchicalized logic built within these blocks. The model was built as an object oriented model focusing on the messages within a wireless network.

The first step in developing the model was to concentrate on the individual components that made up the communications network used during the ELB/ACTD. The authors took a course on the Extend software while at The Naval Postgraduate School, therefore, a basic understanding of the software was achieved. While Extend provides the blocks necessary to construct such a model, all of the communications component logic had to be built from scratch. Much effort went into the construction of each component listed within this chapter and appendix A. To give some perspective to the size of the final

model, 160 MB, the authors of Extend were given a demonstration and acknowledged that it was one of the largest models that they had seen using their software. It should also be noted that they were essential in reducing the size of the original model, 256 MB, to its current size, which is much more manageable. The first piece of the communications architecture developed consisted of one Access Point (AP) and three End User Terminals (EUTs). Once this was completed, it was validated using simulated message traffic and observing the latency associated with each transmission. The same logic utilized for the three EUT AP could then be applied to the development of a multitude of Access Points, each with a differing number of EUTs. For simplicity, the description provided will only address a three EUT Access Point. The AN/VRC-99A was modeled utilizing Time Division Multiple Access (TDMA) and served primarily as the long-haul communications medium for messages traveling to access points that were beyond the ranges associated with WaveLAN. For example, the VRC-99A links were used as the long-range interconnection among ships and aircraft and from aircraft to HMMWVs. WaveLAN, on the other hand, was used to connect from the aircraft to the EUTs and also to support terrestrial LANs centered on a HMMWV WavePoint (Access point mounted on a HMMWV). Once these components are created, they can be interconnected to construct communications architectures of virtually any size.

The model descriptions are intended to provide a basic working knowledge of the model. The low-level design details will be omitted, as they tend to be complex and do not provide any additional benefit to the overall understanding of the models. The goal of this chapter is to provide a general explanation of the models, rather than concentrate on block-

31

by-block descriptions. Each model will begin with a high level view and then proceed with more detailed explanations as necessary for individual components. Appendix A is the data dictionary associated with the models and contains the low level designs.

## 1. Description of a Three EUT Access Point

Figure 6 represents a three EUT AP. As depicted, the end user terminals are connected to an Access Point where there is a sensor and detector to implement the channel access protocol of Carrier Sense, Multiple Access with Collision Avoidance (CSMA/CA) as specified by IEEE 802.11. All message traffic is initiated at an EUT. To increase the reliability of the network and prevent a possible message collision due to the "hidden node" problem addressed previously, the additional protocol of Request to Send/Clear to Send is utilized. An EUT will generate an initial RTS and then all subsequent message traffic will be triggered as each different type of message is received.
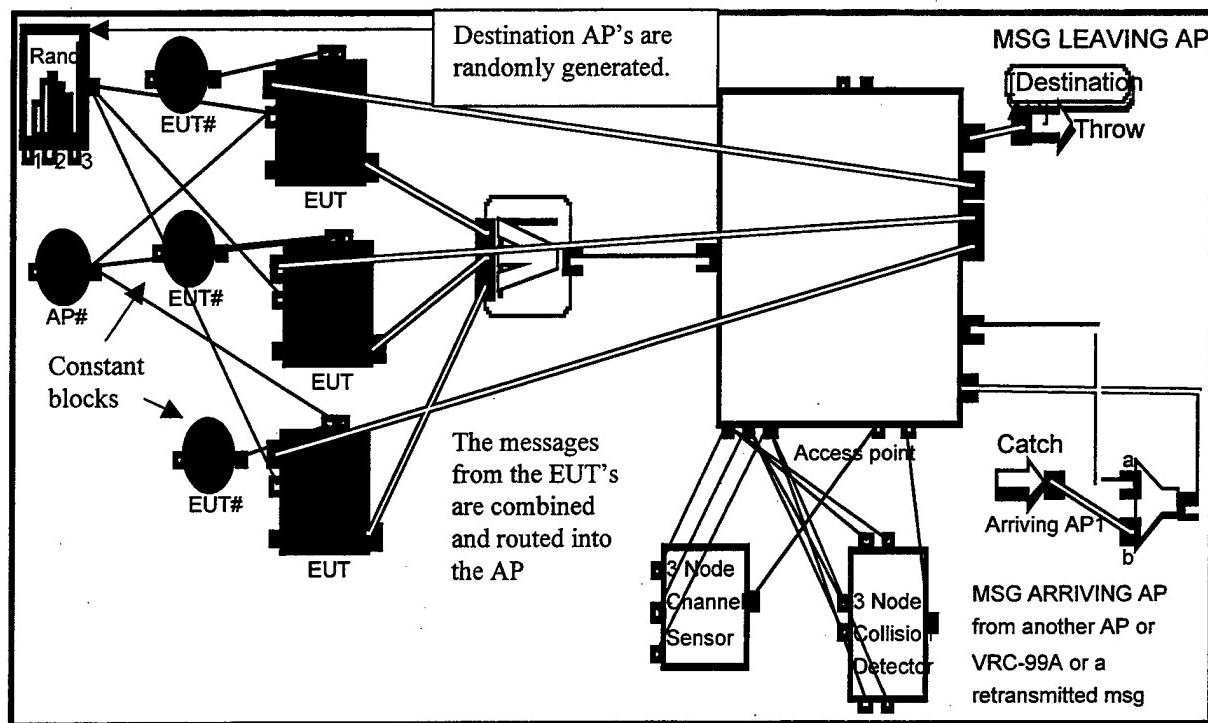
Figure 6.  Three EUT Access Point

A Request to Send (RTS) initiates a Clear to Send (CTS), a CTS initiates the actual

Message (MSG), and a MSG initiates an Acknowledgement (ACK) to complete the

process.  The CSMA/CA protocol is still invoked to control all the different types of

message transmissions.  Refer to Figure 7.
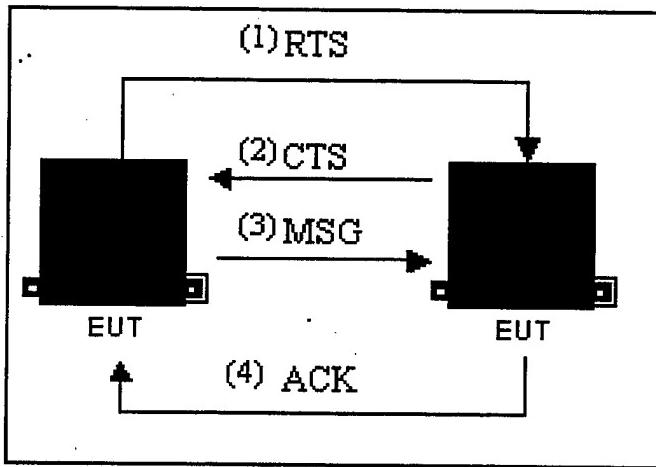
Figure 7. IEEE 802.11 Protocol

### a.    *End User Terminal*



This is where RTS, CTS, MSG and ACK messages destined for this EUT are received. They are processed via logic internal to the EUT block.

Msg Type

select

Combine

EUT Logic

After messages are processed through the EUT, they are routed to the Access Point.
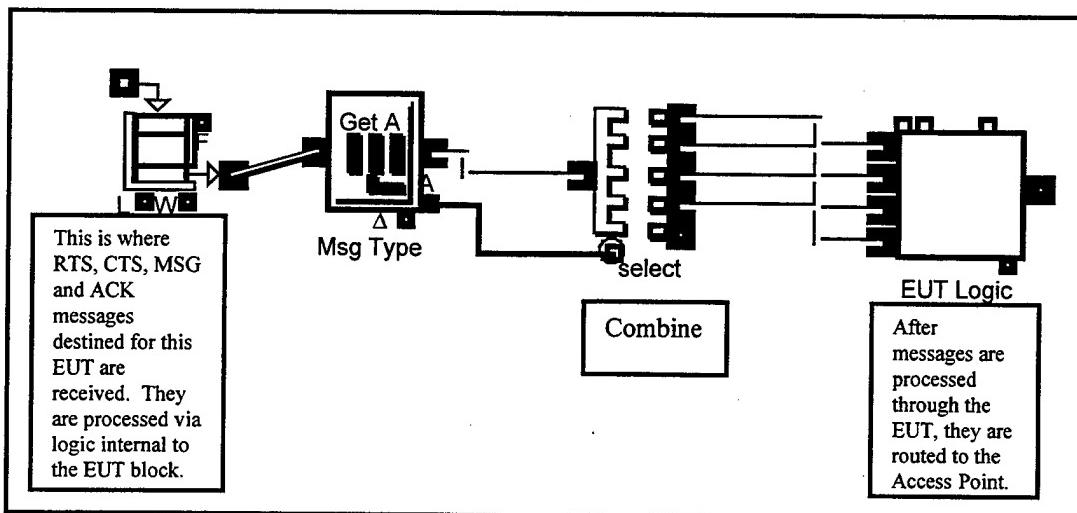
Figure 8. Initial Break Down of End User Terminal

Figure 8 is the initial break down of the end user terminal. The combine block captures the different types of messages to ensure the next appropriate type of message is initiated. For example, if a RTS message is sent to this EUT, a CTS message would be

sent back to the origin EUT to continue the protocol. Within the EUT logic block, the various types of messages are generated and assigned destination addresses. Therefore, once a EUT receives a RTS, it must have the ability to identify the originator and determine the correct destination address. This is accomplished by assigning attributes to messages as they are generated. It includes, but not limited to, an Origin EUT, Origin AP and Message Size as well as their destination counterparts. The EUT logic is provided in Appendix A. After messages are processed through the EUT, they are routed to the Access Point.

The architectural message loading was derived from a combination of both the Department of Defense Interface Standard and a RAND Study. [Ref 10] The DoD's Variable Message Format (VMF) Technical Interface Design Plan was used to determine the message length for each type of message. The RAND study supplied the percentages of each type of message most likely to be implemented within a military communications network. The following chart depicts the type of message loaded as well as the corresponding percentage of use.

| Message Type | Message Size | Percentage of Use |
|---|---|---|
| Establish/Confirm Contact | 500 | 47% |
| Situation Report | 1600 | 24% |
| SPOT Report | 2000 | 8% |
| Request Information | 2000 | 13% |
| Issue Orders | 12000 | 7% |

Table 6. Message Loading

While these five messages are not all inclusive of the communications found on a battlefield, they are indicative for the most part and provide a basis from which to start. The message loading also includes VTC as well as voice. Only certain nodes will have access to VTC, but each EUT will have voice capability. An assumption is made that voice will only be used for coordination and will not replace the conventional voice communications. The message loading logic is available in Appendix A.

### b. Access Point

All message traffic generated from an EUT flows through the Access Point. This includes messages from a local EUT within the same Access Point and messages from external Access Points. Additionally, all messages that collide are retransmitted through the access point. Once a message is inside the access point, the destination address of the message is determined to be either internal or external to the Access Point. Figure 9 depicts this basic process, the entire figure is the Access Point.
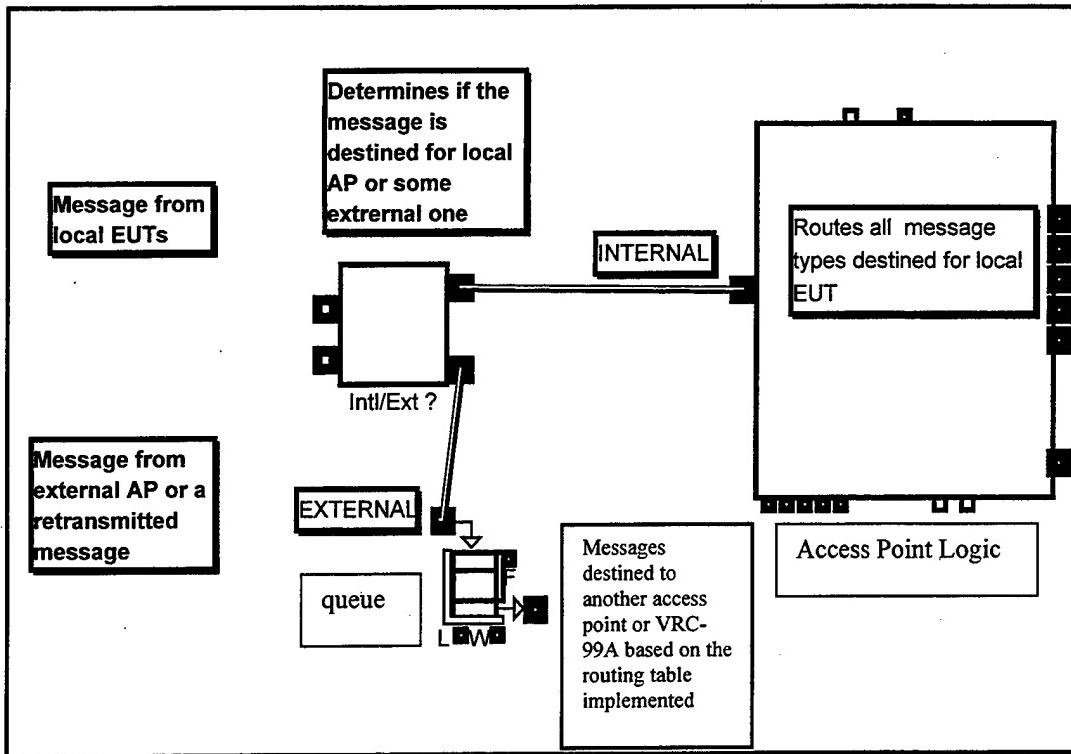
Figure 9. Internal/External Component of Access Point

External messages are routed to another access point or a VRC-99A based on the routing table and network configuration. The logic of the internal/external decision is provided in Appendix A. Figure 10 depicts the traffic flow of internal messages. Messages are received and then routed to the appropriate EUT. The message then enters a bandwidth delay, which is calculated using the formula of message size divided by bandwidth.
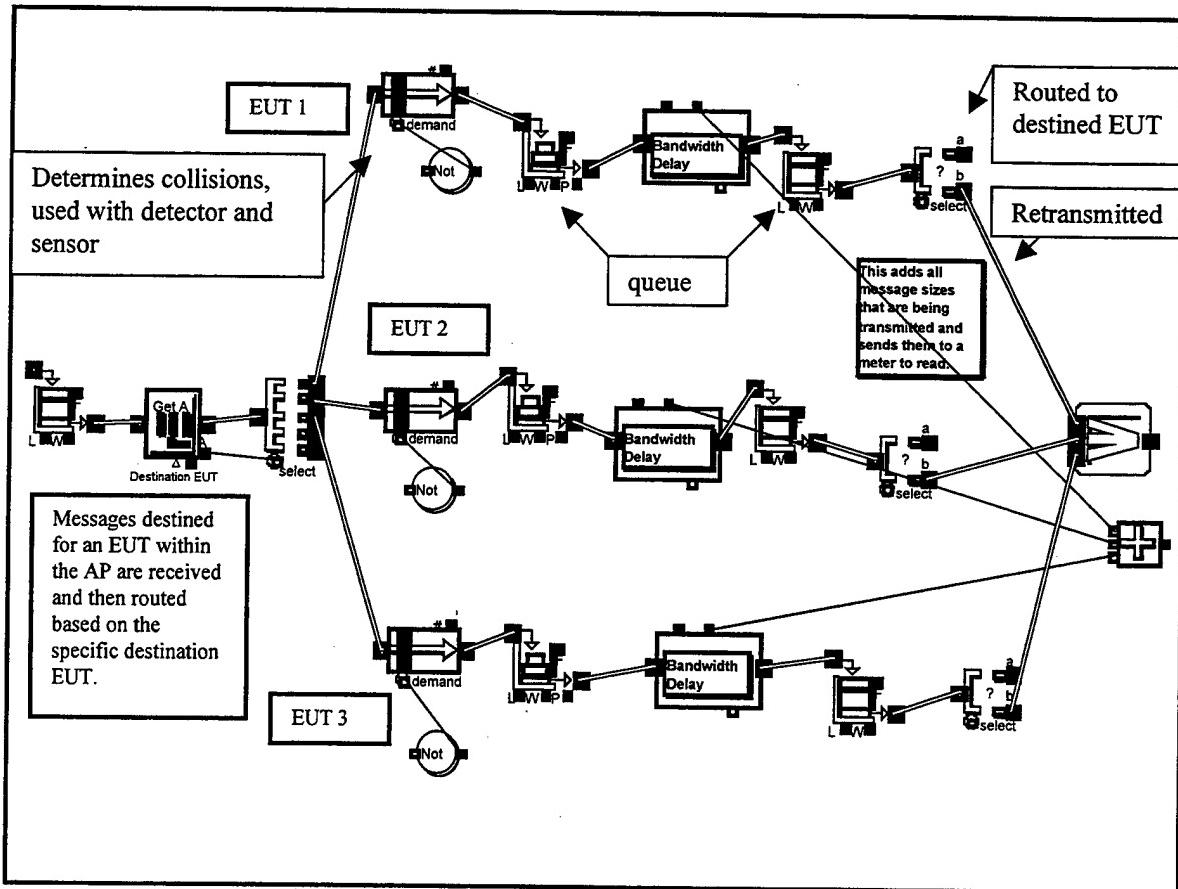
Figure 10. Flow of Internal Messages within Access Point

Internal messages must be sensed and detected. Both the sensor and detector work off of the bandwidth delay hierarchical block. If a message is being delayed, the sensor and detector will be transmitted the information. The sensor ensures that an EUT does not attempt to send a message to a busy EUT; however, there may be an instance when the sensor action is completed simultaneously by different EUTs. This will result in a collision. The detector determines if a collision has occurred. The logic of the sensor and the detector is provided in Appendix A.

If a collision occurs the message has to be retransmitted. A retransmitted message is sent to the identified catch block at the Access Point, which was previously noted in Figure 7, and then follows the same path through the access point once again.

The next step for a message, once it makes it through the access point without undergoing a collision, is depicted in Figure 11. The type of message is determined and then routed to the appropriate throw block. This ensures that the RTS/CTS protocol is adhered to and the next message in the sequence is generated.
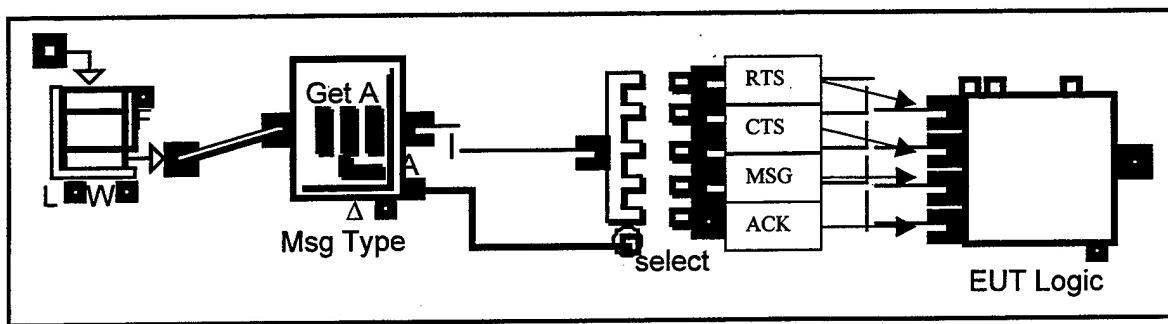


Figure 11. EUT Routing

## 2. Description of an AN/VRC-99A

Figure 12 depicts the high level view of the AN/VRC-99A. The AN/VRC-99A was modeled utilizing Time Division Multiple Access. The catches represent the different links that have been provided a time slot. These initial catches are dependent on the architecture employed and must be established as the model is developed. The destination of messages as they leave the AN/VRC-99A is also dependent on the architecture. A routing table identifying the next path of a message must be incorporated.

39
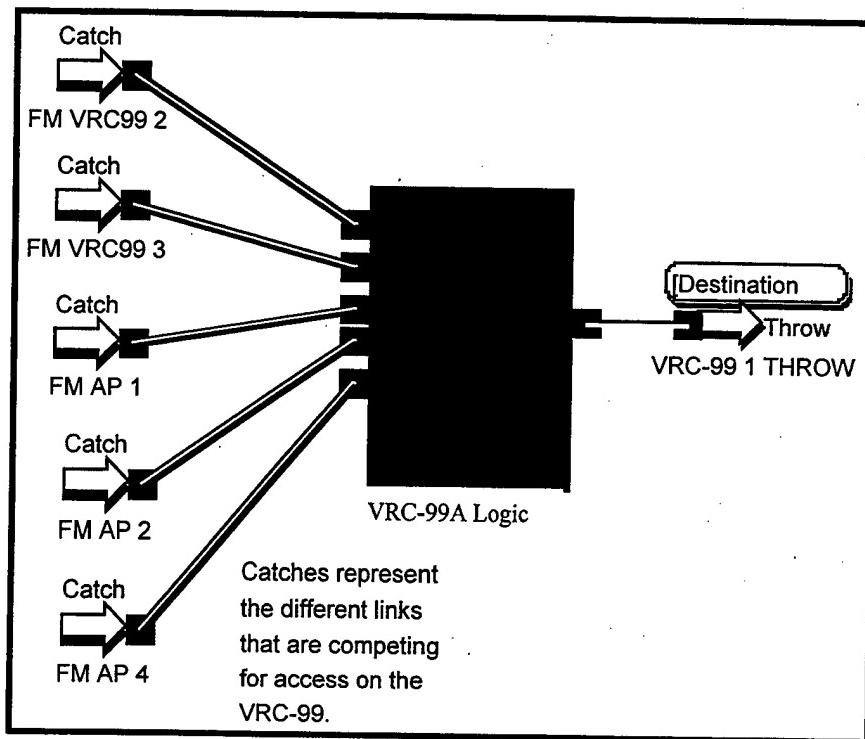
Figure 12. High Level View of AN/VRC-99A

Figure 13 provides the details of the AN/VRC-99A and implementation of TDMA. Once a user's allocated time slot is received, access is available to send message traffic. Time slots are determined by dividing the largest message size by the bandwidth. This ensures that the link will stay open long enough to transmit the appropriate message. Each user has equal access to the VRC-99A and can transmit whenever their allocated time slot is available. After a message is released, it travels across the communication link and undergoes a bandwidth delay; utilizing the equation of message size divided by the bandwidth.
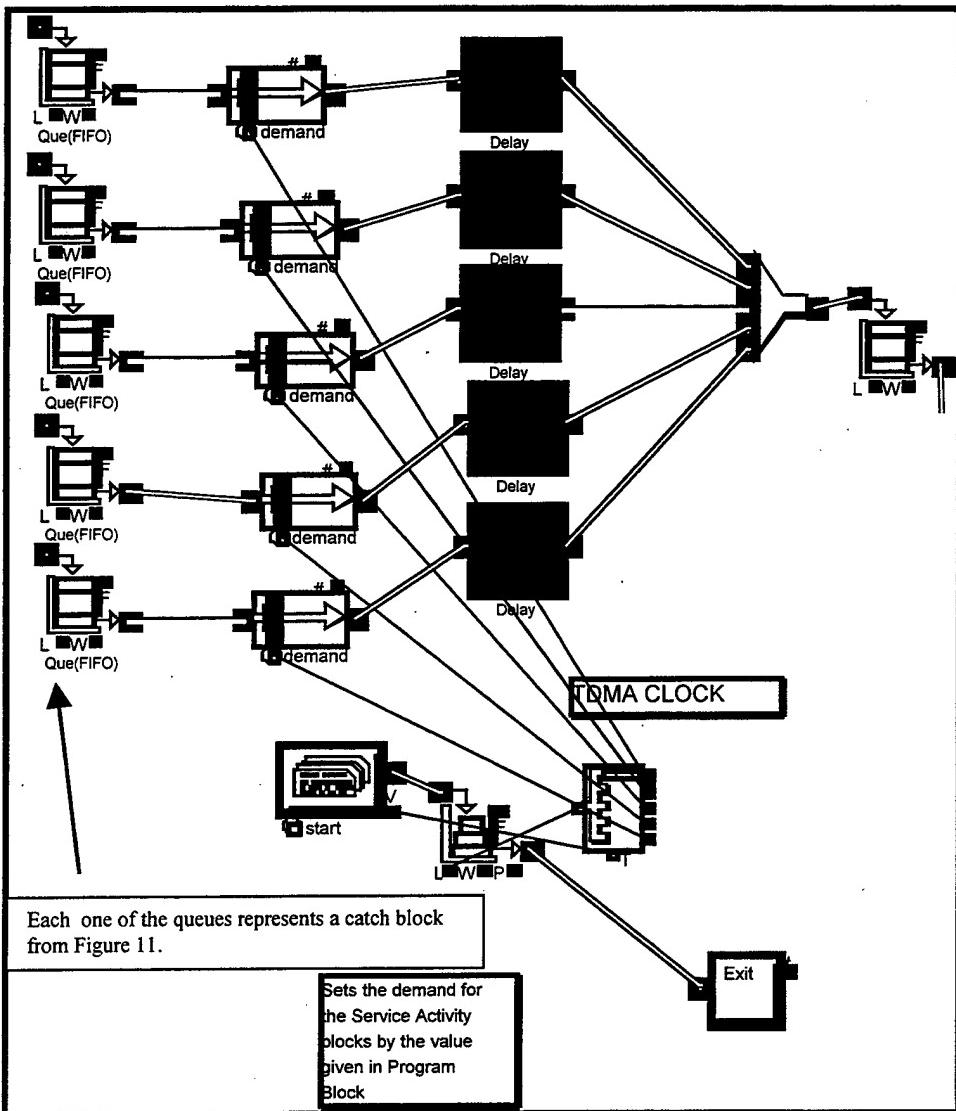
Figure 13. Detailed View of AN/VRC-99A

## A. INITIAL NETWORK CONFIGURATION

The first network configuration chosen was based on the ELB demonstration.

Figure 14 depicts the basic architecture that was modeled. Appendix B is the routing table

used to determine the flow of traffic across this network. This topology was used to
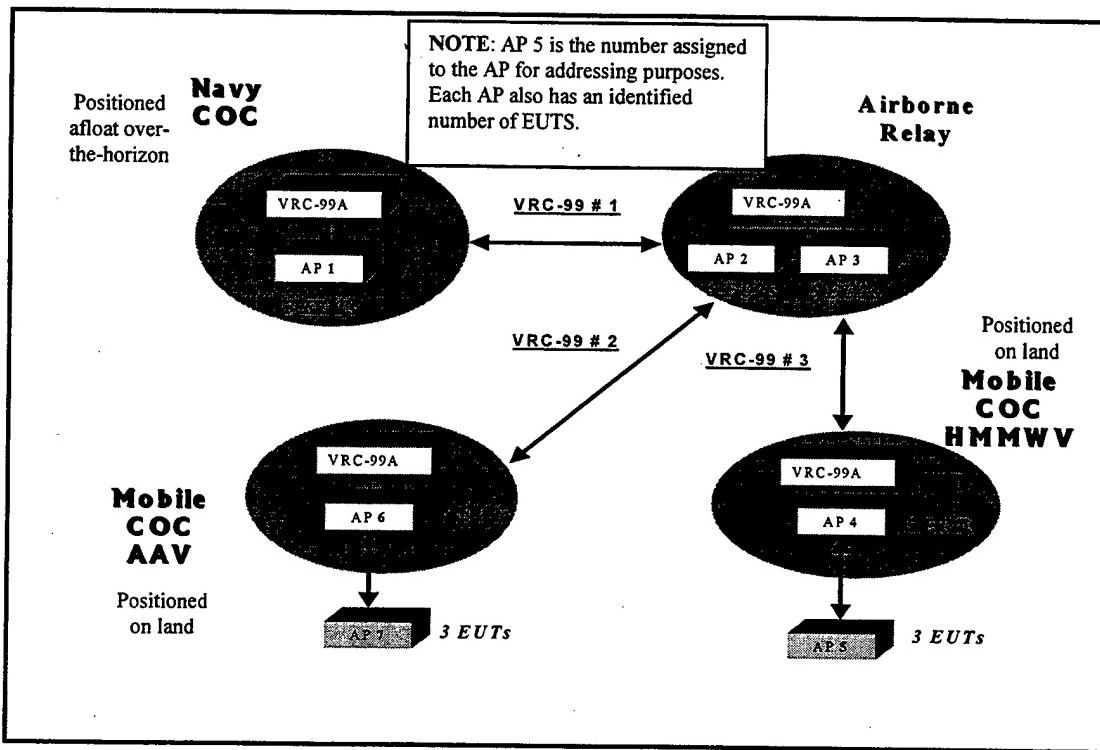
Figure 14. Initial ELB Architecture

validate the basic network operating characteristics and connectivity between the AN/VRC-99A and the WaveLAN equipment.

The AN/VRC-99A and the WaveLAN access points are connected using a router. There are seven access points and a total of twenty-nine EUTs. A number identifies each access point for addressing purposes, i.e., AP 5 is access point number five. Additionally, each access point is assigned a certain number of EUTs. The number of EUTs is listed next to the block representing an access point. To put this diagram into proper perspective and scale, the Navy COC is communicating from over-the-horizon and cannot connect directly to the Mobile COCs. Messages must travel through the airborne relay. The AN/VRC-99s represent the long-range links.

42

## B.   INITIAL NETWORK TEST RESULTS

A simulation was run using the initial network depicted in figure 14. The simulation ran for 8 hours (simulation time), which constituted about 525 seconds of real (clock) time. VTC was introduced at two separate points. The first was initiated at the very onset of the simulation and ran for 300 seconds and the second was initiated at or about 100 seconds and concluded at or about 300 seconds. The following charts show some significant spikes in time delay during the VTC, but tapered off considerably to about .3 - .5 seconds delay. This would seem consistent, as each message must compete for access at the VRC-99A's and the bandwidth delay chokepoints within the access points. Both VTC and Voice were given highest priority and thus were granted access accordingly. All communications that started and ended within a local access point showed a delay equal to the message size divided by the bandwidth. This is consistent with the communications theory. The following charts depict the delays according to time for each EUT and AP. The vertical axis depicts the delay incurred for each message. The horizontal axis displays the simulation time. Each plotter is capable of reading up to 4 EUTs. A legend is located in the lower half of the plotter and indicates which EUTs are being measured. This is usually in color and can be easily discerned, however for our purpose it is not necessary to distinguish between them as the report data contains this information and is readily available in Appendix D. An electronic copy of all data can be obtained from the Thesis Advisors designated on the cover page.
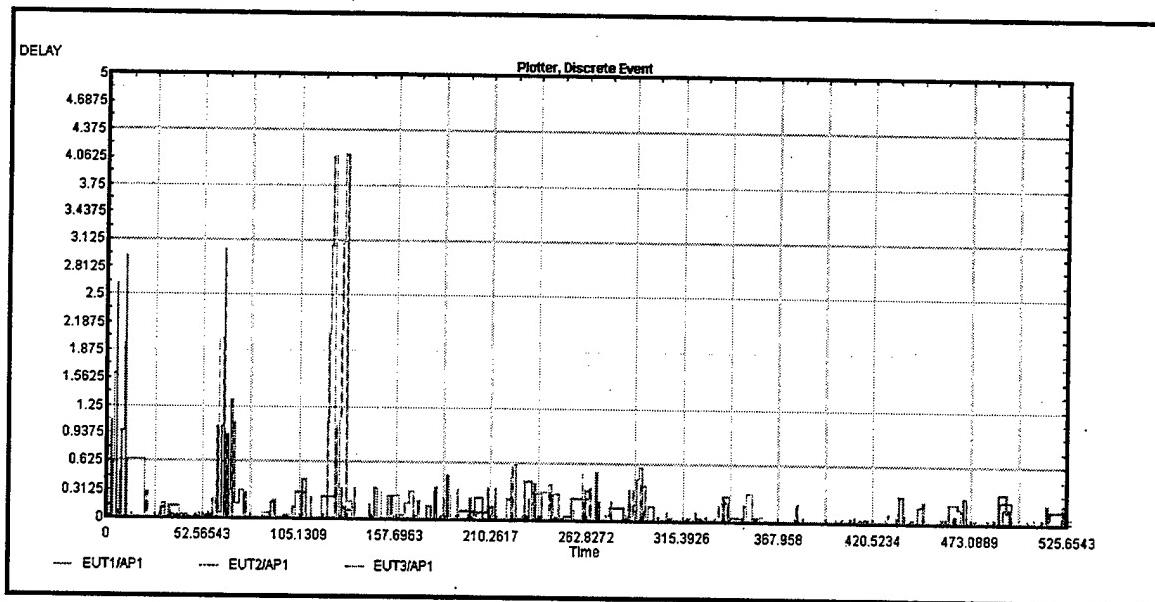
Figure 15.  Delay within AP 1
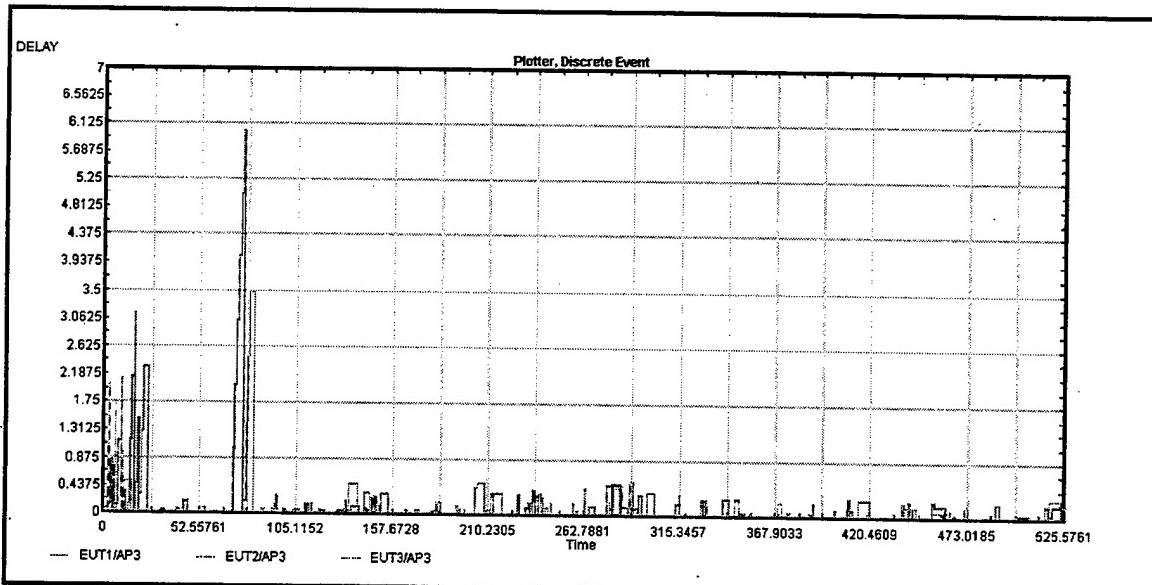


Figure 16.  Delay within AP 3

44
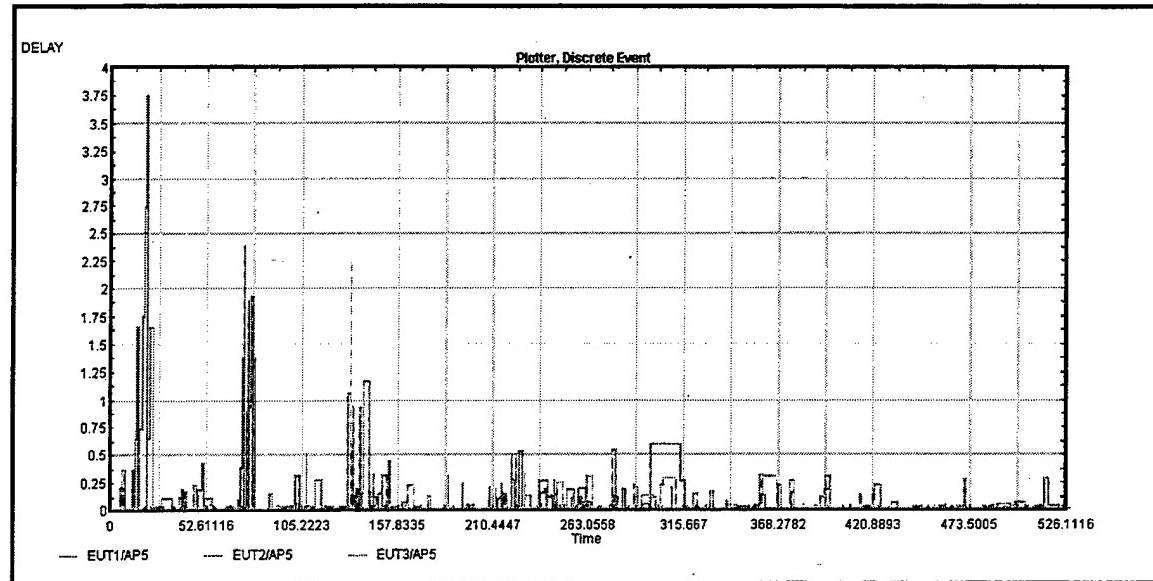
Figure 17. Delay within AP 5
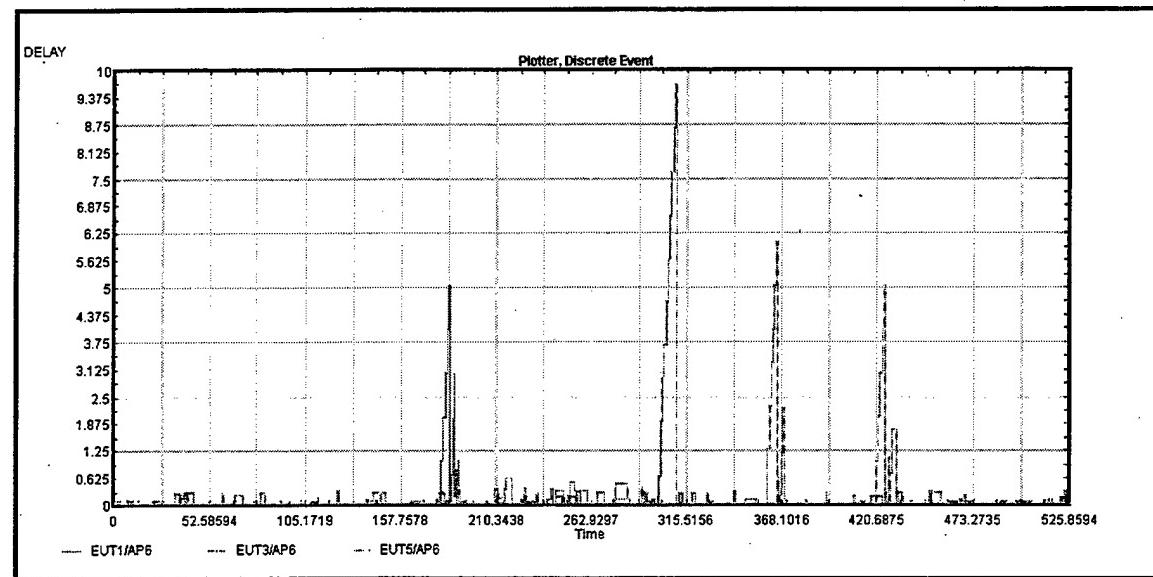


Figure 18. Delay within AP 6

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# IV. SCALED NETWORK MODELING

## A. SCALED NETWORK

### 1. Assumptions

To scale the model for a Marine Expeditionary Brigade sized-force, we must make certain assumptions about the size and make-up of the Marine forces. We based our assumptions regarding the strength requirements on the Center for Naval Analysis document <u>Project Culebra: Establishing the MEF (afloat) in 2010</u>. [Ref 11] Three critical assumptions adopted from this publication were:

- The units, numbers of personnel, and types of equipment that make up a MEF (FWD).

- MEF (FWD) is comparable to MEB in numbers of personnel, and types of equipment

- Instead of traditional amphibious operations, in 2010 the Marine Corps will use an OMFTS concept, which emphasizes fire-power and maneuver and de-emphasizes large-scale build up ashore of supplies and combat service support. This emphasis is covered in the literature review of network operations in the 21st century to gain and maintain information superiority.

### 2. MEB Force Structure

Initial modeling and scalability consisted of determining the number of communication links along with the numbers of Access Points and End User Terminals

needed to sustain a MEB sized force. The ship-to-shore communications utilized an Airborne Relay, via VRC-99A radios to each of the Force Reconnaissance Companies, the Marine Expeditionary Brigade (MEB) Headquarters (HQ) and the Regimental Landing Team (RLT) HQ. The MEB HQ and the RLT HQ were the primary nodes that maintained communications with the COC afloat. The scaled simulation model represents these Headquarters with Access Points consisting of ten End User Terminals. The model also represents the Force Reconnaissance Companies with Access Points consisting of three End User Terminals. The MEB and RLT Headquarters Access Points support communications links to three Infantry Battalions, six Combat Service Support Units, and a Artillery Battalion all via VRC-99A radios. The simulation model represents each of the Infantry Battalions, as well as the Artillery Battalion, with an Access Point consisting of ten and five End User Terminals, respectively. The model also represents the six Combat Service Support Units with Access Points consisting of three End User Terminals. (See Figure 19).

Both the MEB and the RLT COC's Access Points support wireless communications via WaveLAN to each of the three following unit's headquarters: Truck Company, Communications Company, and Maintenance Company. Each of the Infantry Battalion Access Points supports three Infantry Company Access Points via WaveLAN. All Infantry Company Access Points have five End User Terminals. The Infantry Company supports communication links to five Access Points belonging to the following units: AAV, LAAD, Tanks, Engineers, and LAR. Each of these units' Access Points consists of three End User Terminals. The scaled MEB architecture contains a total of

48

202 End User Terminals. This entire command and control communication network is illustrated in Figure 19. Although this scaled model will not fit each and every deployed MEB force structure and the numbers of EUTs and APs may vary slightly, this thesis serves to model the majority of the MEB structure needed to operate under OMFTS in an ELB environment.

## B.  SCALABILITY ARCHITECTURE

Figure 19 represents a snap shot of the Communication structure outlined in the Center for Naval Analysis document mentioned previously. [Ref 11] This structure is in compliance with the assumptions outlined above along with the current C4I structure utilized throughout Marine Forces. The Marine Expeditionary Brigade below depicts those forces operating in an OMFTS environment. End User Terminals are spread evenly throughout the Ground Combat Element (GCE), Command Element (CE), Aviation Combat Element (ACE), and the Brigade Service Support Group (BSSG).

49
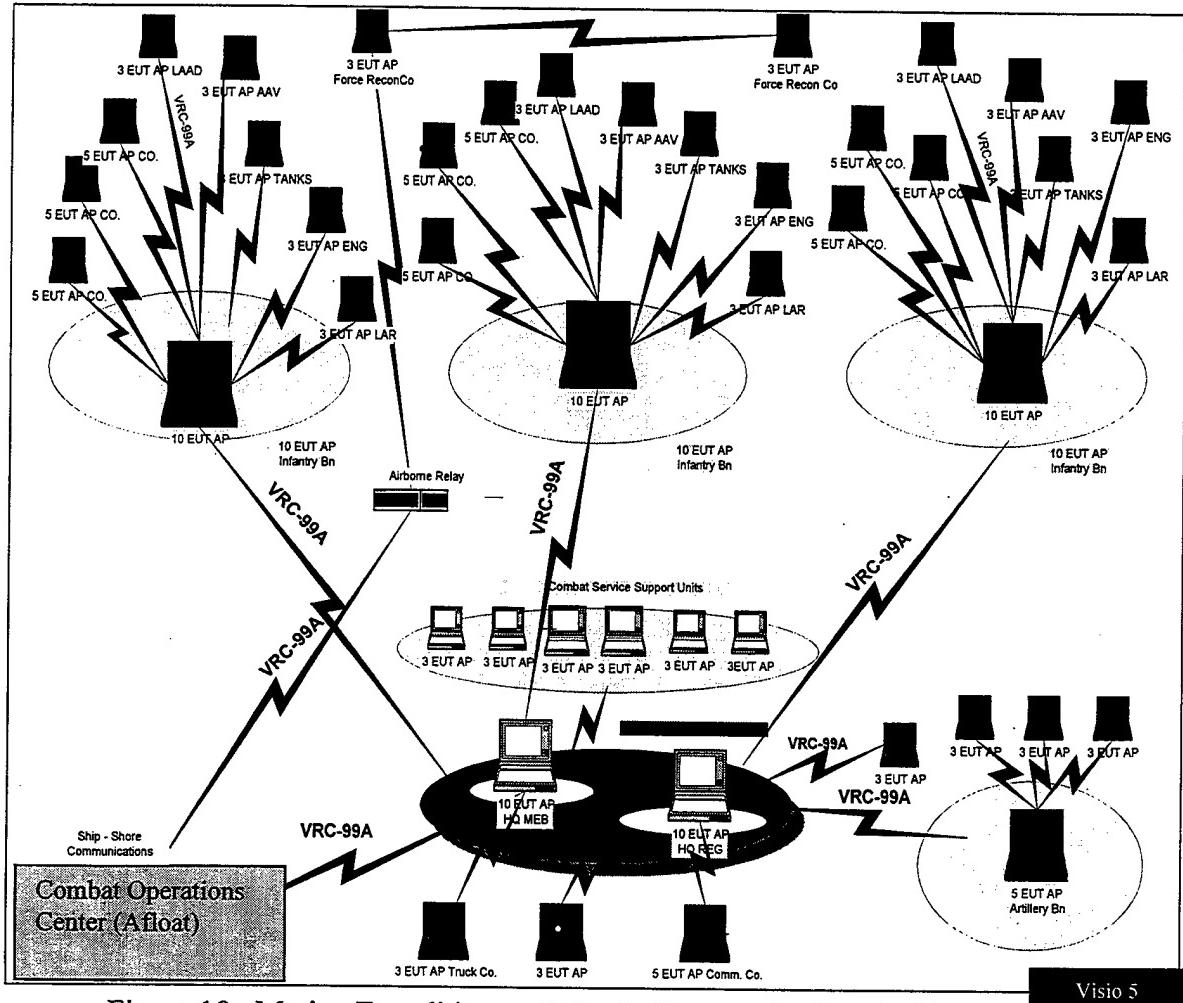
Figure 19. Marine Expeditionary Brigade Communication Architecture

# V.     CONCLUSIONS AND RECOMMENDATIONS

## A.    SCALABILITY SIMULATION RESULTS

A total of four simulation runs were conducted. The data is summarized in the plots and charts provided in Appendix D; the charts contain detailed message traffic reports for randomly selected EUT's. Run 0 was programmed for duration of 1000 simulation seconds, which took approximately 12 hours to accomplish. All of the EUT's for Run 0 and Run 1 were configured to simulate an architecture that would use a 2MB PCMCIA card within the EUT's, thereby limiting the throughput to 2 MB. Video Teleconference was initiated within AP 1, Combat Operations Center, and was to begin at 500 seconds with its destination as AP 5, Regimental Headquarters. Little to no significant delay was experienced although a small spike is readily noticeable at approximately this time. (Refer to Figure 20).



Figure 20.  Run 0, AP 4

51
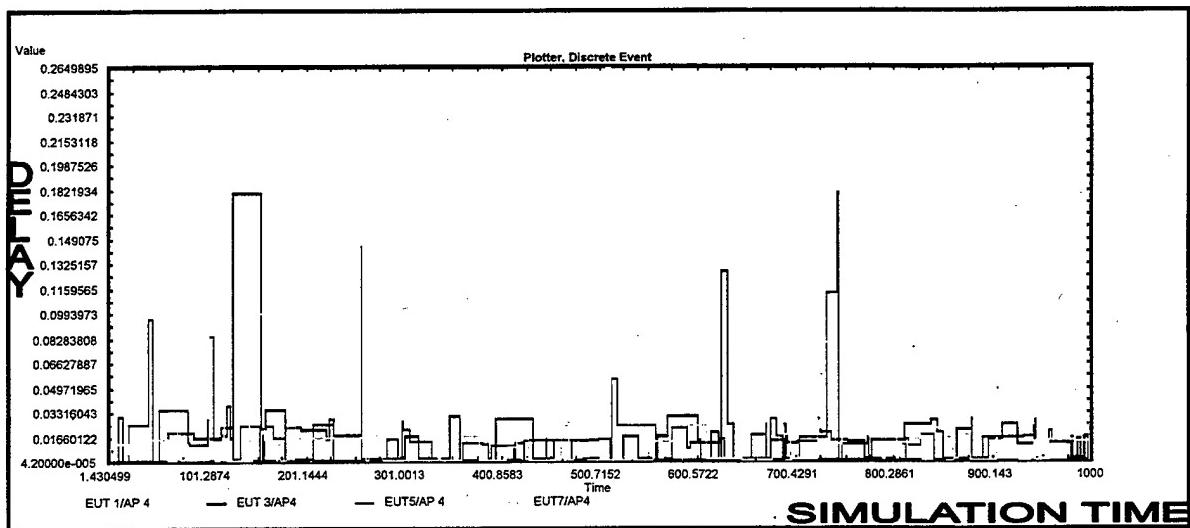
The second run consisted of relatively the same constraints as before with the exception that the run time was 1200 simulation seconds. Two separate VTC communications were conducted. The first VTC was initiated at AP 5, a Regimental Headquarters, and addressed to AP 31, a Battalion Headquarters. The second VTC was initiated at AP1, COC, and addressed to AP 5.

In this simulation, an increase in delay can readily be seen at the approximate times that the VTC was initiated. Other than these instances, the delays were nominal. (Refer to Figure 21)
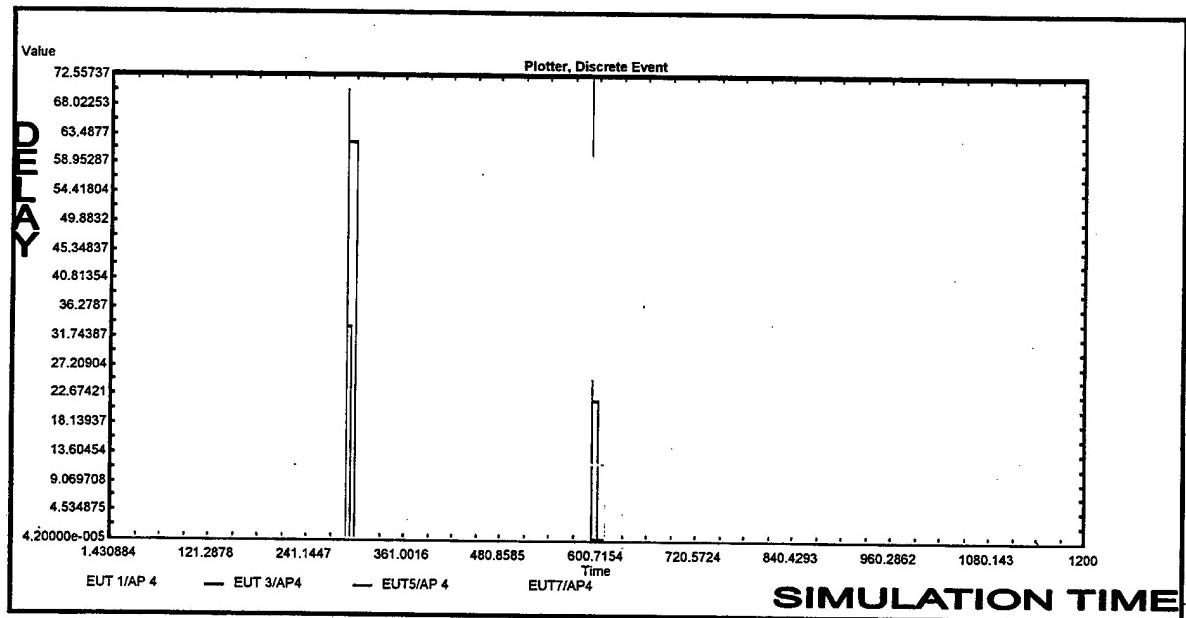


Figure 21. Run 1, AP 4

The second pair of runs was identical to the first pair with the exception of the throughput allowed at the EUT's. This was elevated to 11 MB to simulate the current capability of the WaveLAN wireless communications system. From Figure 21 it is readily apparent that the overall delay was much less than the architecture that simulated a 2MB

52

throughput. Notice that the delay spike is numerically smaller and that it is further to the left on the time scale. This is consistent with communications theory. As expected, there is a much smaller delay within the EUT with the 11 MB card as compared to the previous simulation run utilizing a 2MB card. The message is spending less time within the destination EUT and an acknowledgment is initiated much sooner. Refer to Figure 22.
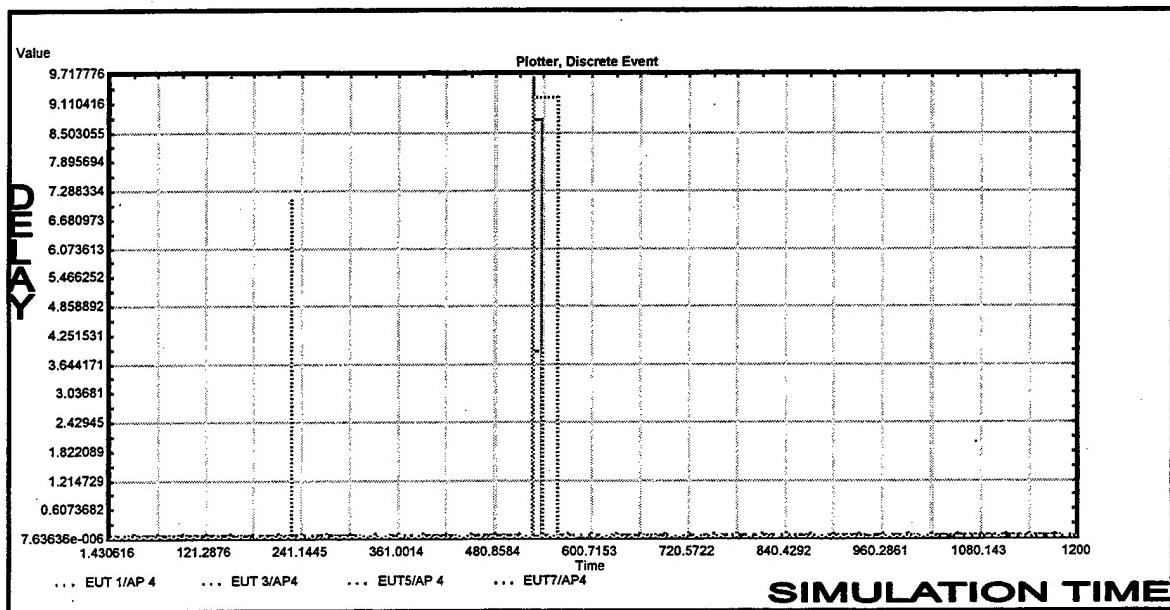


Figure 22. Run 3, AP 4

The final results of the simulation show that the scaling of the wireless communications architecture to a size comparable to that of a Marine Expeditionary Brigade resulted in no significant increase in delay. However, it does show that there is a decrease in performance when VTC is employed. This is to be expected since other Access Points are competing for a time slot within the VRC-99A. There were times when the architecture showed increased delay without VTC. These were primarily due to an Access Point receiving heavy traffic with larger type 8 messages (5 Paragraph Orders) than

usual. This is an exception rather than the rule, as the type of messages loaded is sent randomly and the probability of this actually occurring is low.

## B. ALL WAVELAN SIMULATION RESULTS

A secondary research objective was to determine the feasibility of an all WaveLAN system, essentially excluding the VRC-99A from the simulation. A portion of the final model was configured using 3 Access Points and 1 VRC-99A. Figure 23 depicts the configuration used.
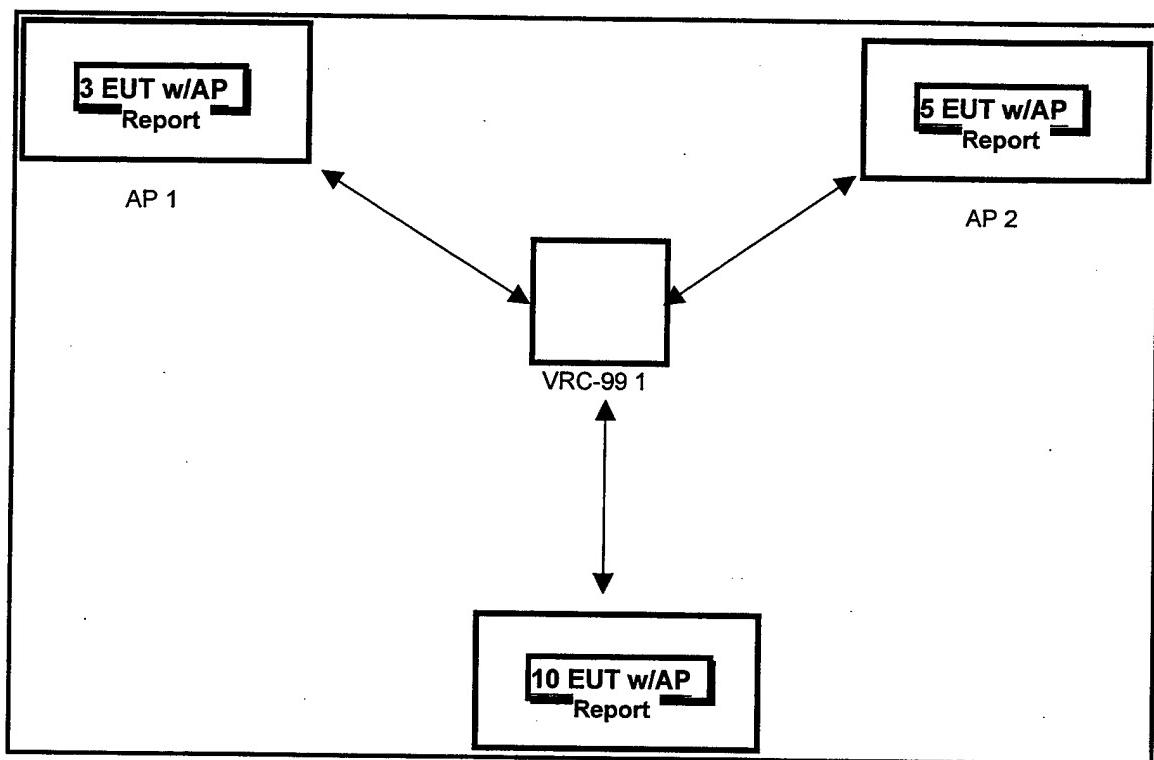


Figure 23. WaveLAN/VRC-99A Configuration

A Run was executed for 1500 simulation seconds, including 3 Video Teleconferencing activities. The first and second VTC's was initiated at 200 and 600

seconds, respectively, within AP 2 and were destined to AP 4. The third VTC was initiated at 1000 seconds within AP 4 and was destined to AP 1.

The message loading within the AP's was identical to that previously used within the large model, with the exception of message frequency. It was programmed to initiate messages at 10 times the rate used before; roughly 1 message sent every second. This was done to load the system with such a capacity that any delays would be more apparent and easier to calculate. Figure 24 depicts the delays encountered during Run 4.
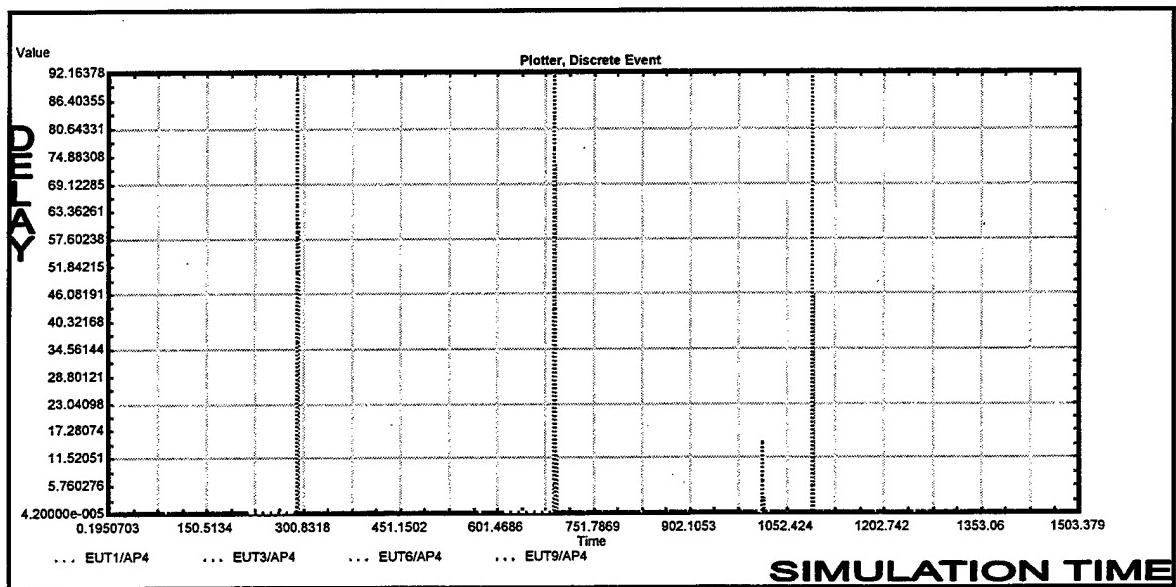


Figure 24. Run 4, AP 4

This same model was then modified in Run 5, so that all VRC-99A's were replaced with Access Point's acting as repeaters. This "repeater" would solely transmit the information to the appropriate AP; no message generation would be initiated. A total of 4 "repeaters" were swapped for one VRC-99A. Figure 25 depicts this configuration.

55
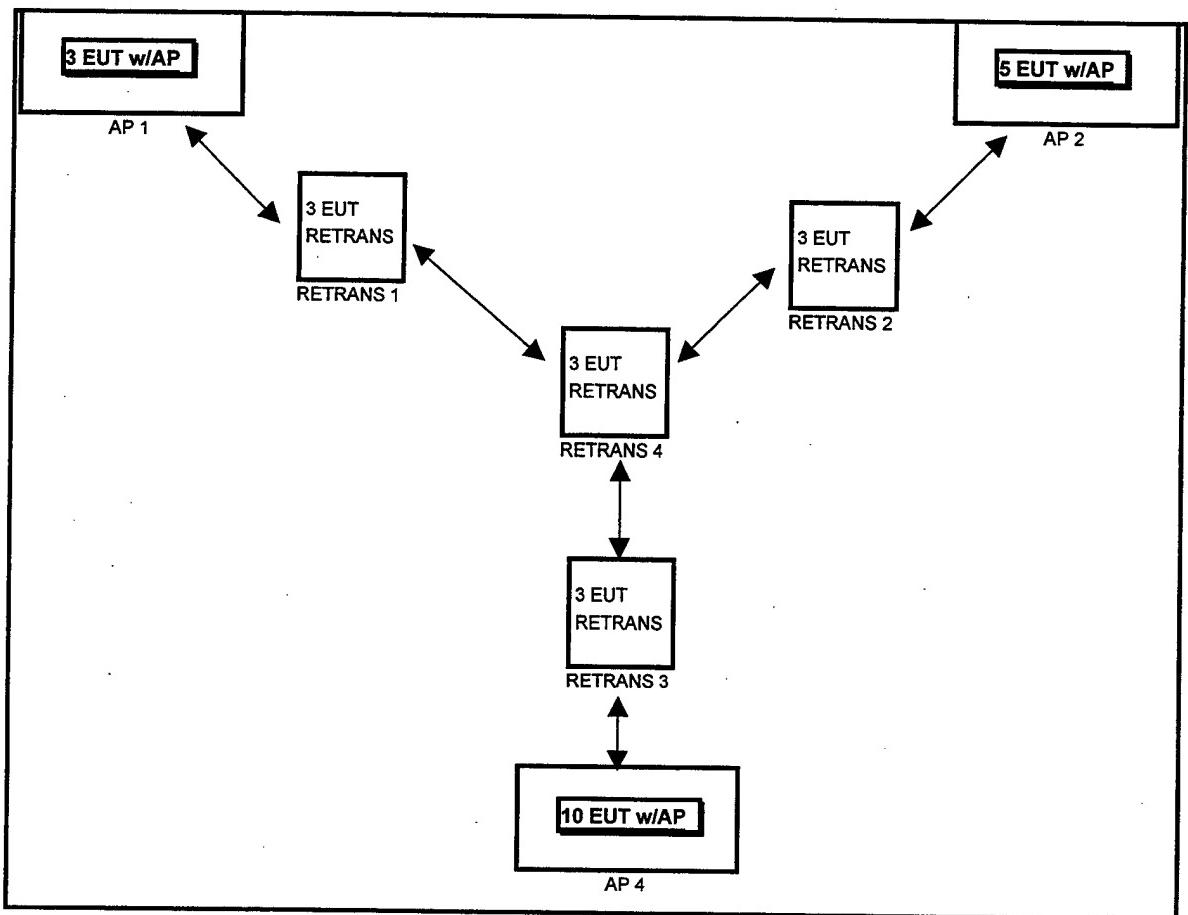
Figure 25. All WaveLAN Configuration

Multiple repeaters were necessary to cover the long-range distance that was previously covered by the VRC-99A. The Run would be identical in all aspects to the WaveLAN/VRC-99A configuration. Figure 26 depicts the delays found within Run 5.
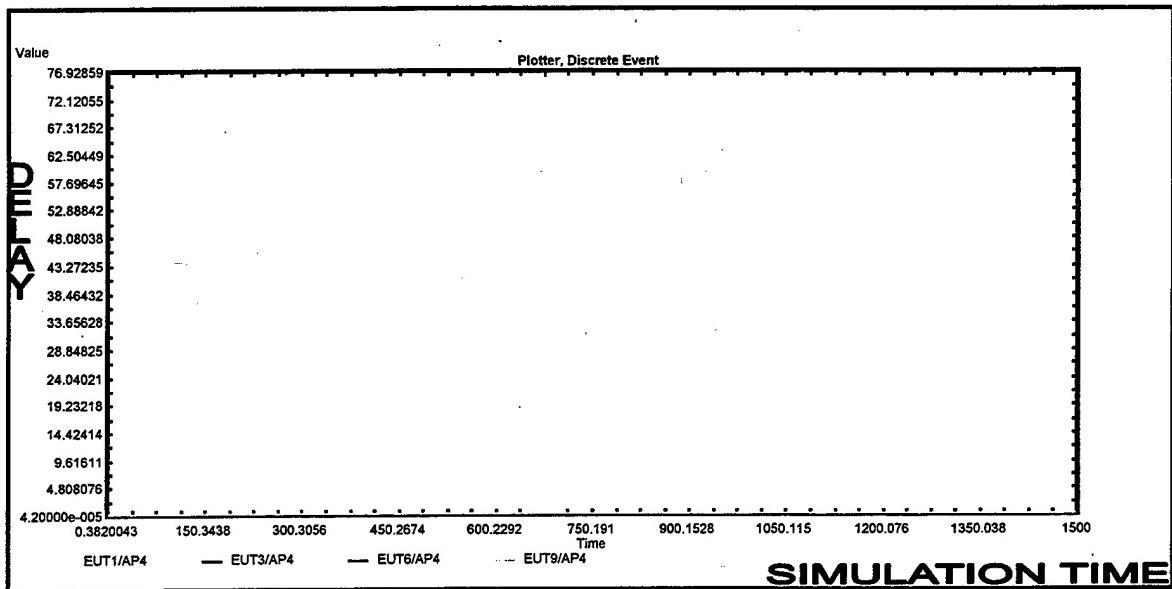
Figure 26. Run 5, AP 4

According to the data, the overall delays associated with the VTC were less in this configuration. This can be attributed to the fact that the "retrans" AP's add no delay to the message as it is routed to its next destination. The data does in fact suggest that an all-WaveLAN architecture is possible. However, it should also be noted that it would take a considerable amount of extra radio assets to fill the role of a retransmission site, as well as extra personnel and logistics to support such an operation.

## C.   FUTURE AREAS OF RESEARCH

Although this thesis addresses the delays that would be inherent in a large-scale model, it should be noted that dynamic roaming AP's were not addressed. The assumption is that the AP is relatively fixed and that the EUT's are free to roam about. This is much akin to the commercial office environment where computers may be moved to new

locations, but the AP's are fixed within the office space. Roaming AP's create addressing problems that are still being addressed within the private and DoD sectors.

Ideally once the above problem has been addressed, addressing roaming AP's could then be incorporated within this model's logic. This would allow for a more dynamic model and possibly resolve future initiatives.

# APPENDIX A. EXTEND MODEL

This appendix contains the low-level design of the ELB ACTD network model. Each block is displayed along with the detailed design of the block on the ensuing page. All of the blocks displayed are hierarchical blocks designed to layer the model. The detailed low-level design shows the functionality within the model.

```
+-------------------+
|  +-------------+  |
|  | 3 EUT w/AP  |  |
|  +-------------+  |
+-------------------+
```

3 EUT Access Point

3 EUT Access Point

61

End User Terminal

62

EUT Message Routing

EUT Logic

64

3 EUT Wireless Logic

```
 ┌─────────────┐
 │ ■           │
 │  Message    │
 │  Logic      │
 │           ■ │
 └─────────────┘
```

Message Logic

66

Message Logic Detail

VTC

VOICE

CID

NETWORK TRAFFIC

COMMTYPE

COMMTYPE

COMMTYPE

COMMTYPE

COMMTYPE

COMMTYPE

Initiates MSG

Initiates MSG

Initiates MSG

Initiates MSG

Set A

Get A

Exit

start

Rand

select

COMM TYPE (VTC,CID, or VOICE are the
only ones set prior to this point) The
regular network traffic is set after this point
and is then further divided into particular
types of messages.

For network traffic, the comm type is established
from a Rand Study.  4 = Establish or confirm
contact(47%), 5 = sitrep(24%), 6 = SPOTREP(8%),
7 = Req Info(13%), 8 = Issue Orders(7%)

Determines the type
of network traffic so
a proper message
size attribute can be
added.

67

ACCESS POINT

Access Point

Access Point

68

Routing with in Access Point

69

AP Logic

70

Detailed Routing with in Access Point. Shows Bandwidth Delay Blocks
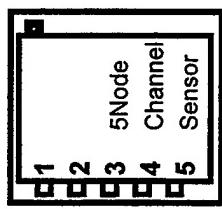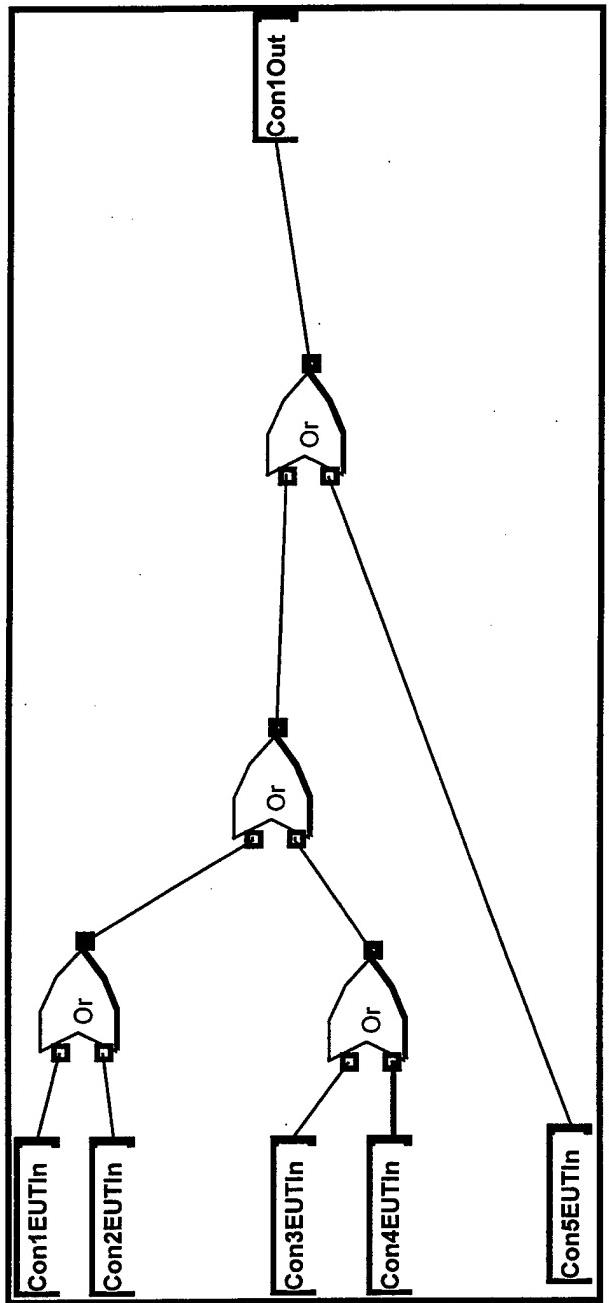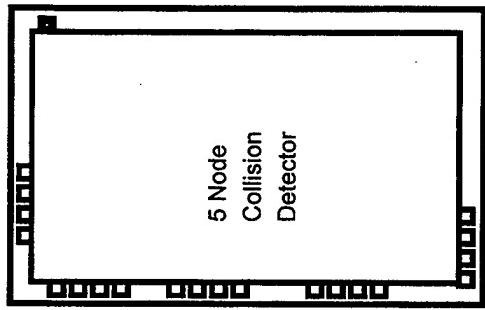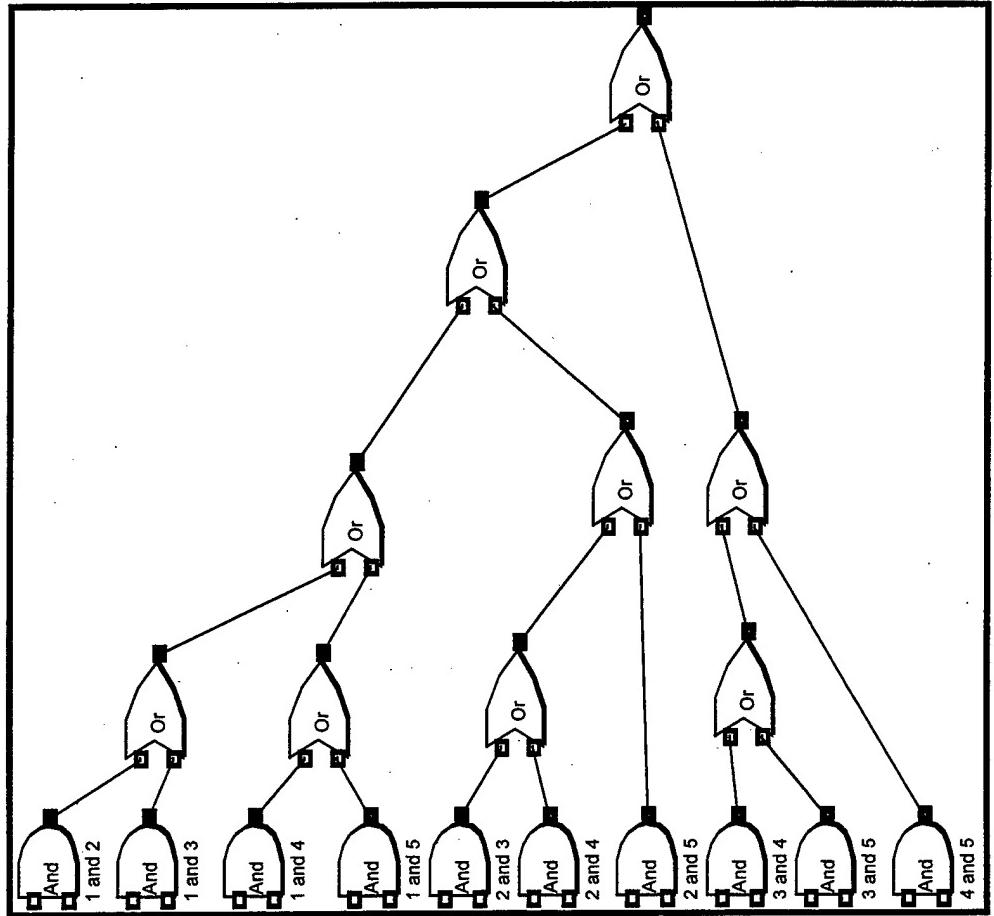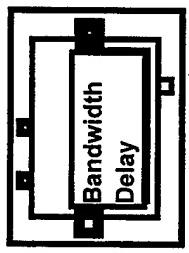
The block diagram labels include: "This adds all message sizes that are being transmitted and sends them to a meter to read.", "Bandwidth Delay", "demand", "Not", "select", "Get A", "Destination EUT"

71

1
2
3 5Node
4 Channel
5 Sensor

Sensor

72

5 EUT Sensor

5 Node
Collision
Detector

Detector

74

5 EUT Detector

Bandwidth
Delay

Delays Message Traffic

76

Detailed Delay

77

Catch
FM VRC99 2

Catch
FM VRC99 3

Catch
FM AP 1

Catch
FM AP 2

Catch
FM AP 4

Destination
Throw
VRC-99 1 THROW

Catches represent
the different links
that are competing
for access on the
VRC-99.

VRC-99A

78
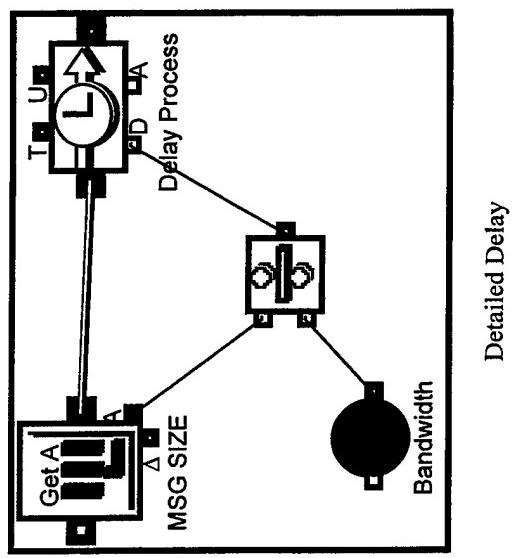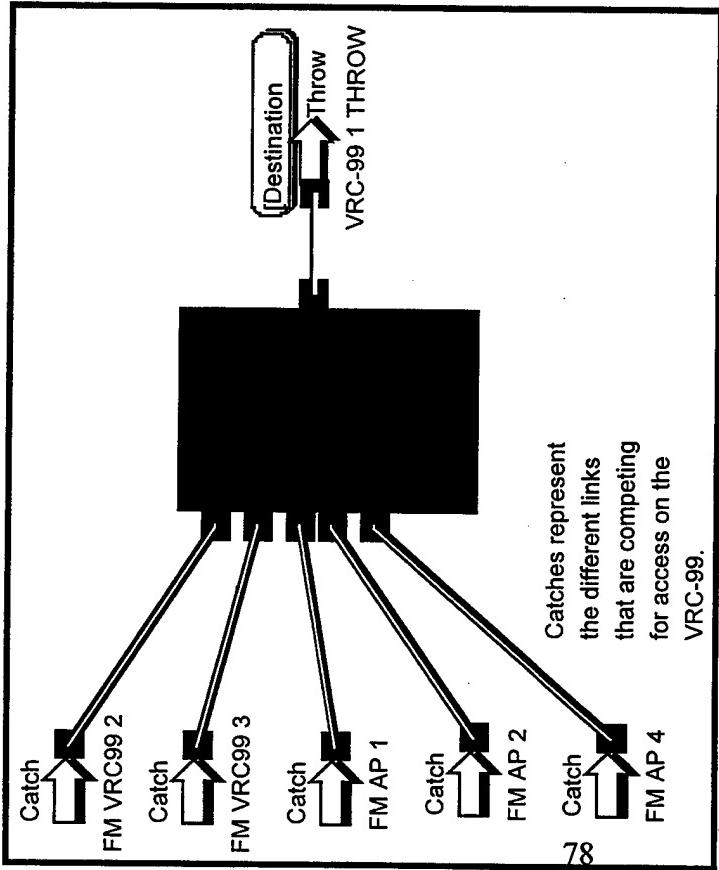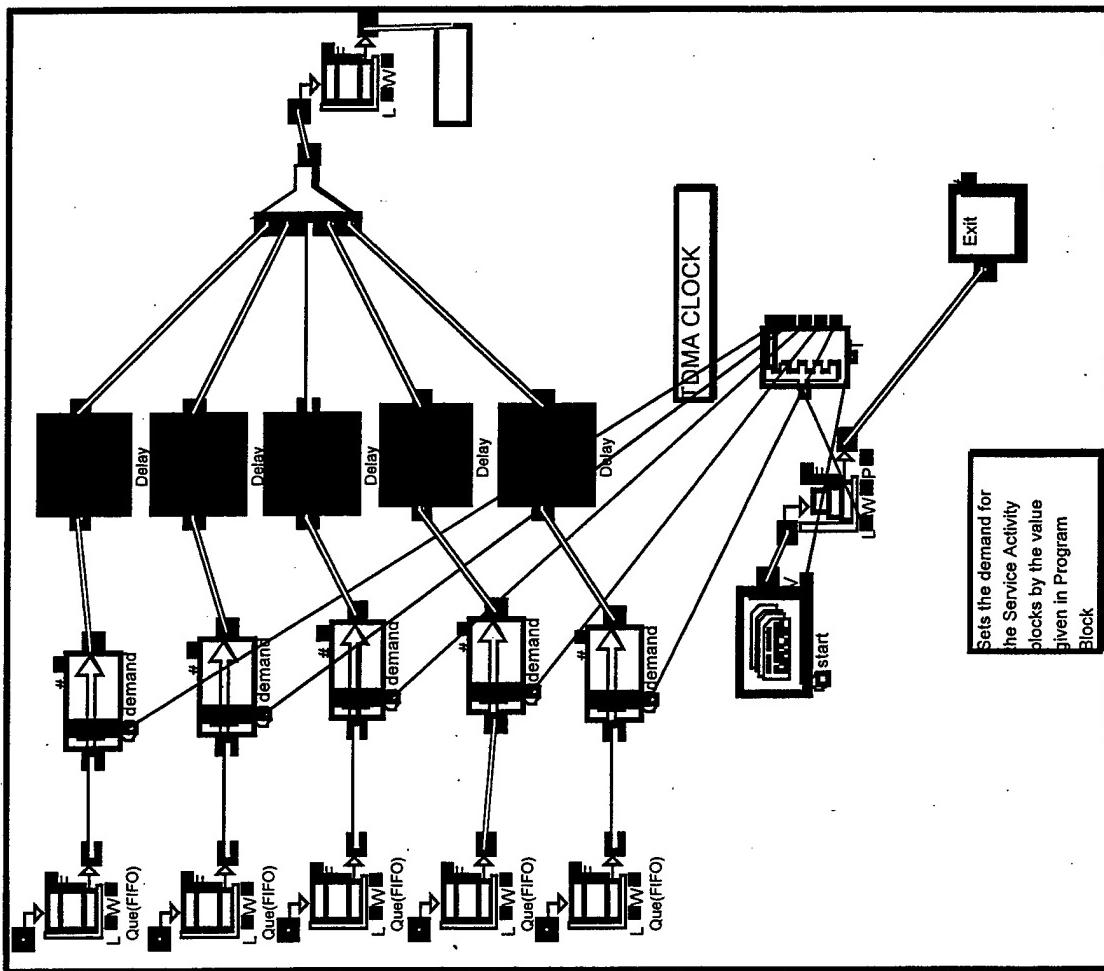
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# APPENDIX B. INITIAL MODEL ROUTING PLAN

This appendix contains the message routing information for the initial network model. Within the tables below the attribute value of the DESTINATION ACCESS POINT is used to make all routing decisions. The tables show the Access Points that the messages are leaving and the respective Catch block that the message is routed.

# MESSAGE ROUTING THROUGH *INITIAL* ARCHITECTURE

## Messages Leaving Access Point # 1

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | INTERNAL |
| 2 | VRC-99 # 1 |
| 3 | VRC-99 # 1 |
| 4 | VRC-99 # 1 |
| 5 | VRC-99 # 1 |
| 6 | VRC-99 # 1 |
| 7 | VRC-99 # 1 |

## Messages Leaving Access Point # 2

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC-99 # 1 |
| 2 | INTERNAL |
| 3 | AP3 |
| 4 | VRC-99 # 3 |
| 5 | VRC-99 # 3 |
| 6 | VRC-99 # 2 |
| 7 | VRC-99 # 2 |

### Messages Leaving Access Point # 3

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC-99 # 1 |
| 2 | AP2 |
| 3 | INTERNAL |
| 4 | VRC-99 # 3 |
| 5 | VRC-99 # 3 |
| 6 | VRC-99 # 2 |
| 7 | VRC-99 # 2 |

### Messages Leaving Access Point # 4

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC-99 # 3 |
| 2 | VRC-99 # 3 |
| 3 | VRC-99 # 3 |
| 4 | INTERNAL |
| 5 | AP5 |
| 6 | VRC-99 # 3 |
| 7 | VRC-99 # 3 |

## Messages Leaving Access Point # 5

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | AP4 |
| 2 | AP4 |
| 3 | AP4 |
| 4 | AP4 |
| 5 | INTERNAL |
| 6 | AP4 |
| 7 | AP4 |

## Messages Leaving Access Point # 6

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC-99 # 2 |
| 2 | VRC-99 # 2 |
| 3 | VRC-99 # 2 |
| 4 | VRC-99 # 2 |
| 5 | VRC-99 # 2 |
| 6 | INTERNAL |
| 7 | AP7 |

## Messages Leaving Access Point # 7

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
| --- | --- |
| 1 | AP6 |
| 2 | AP6 |
| 3 | AP6 |
| 4 | AP6 |
| 5 | AP6 |
| 6 | AP6 |
| 7 | INTERNAL |

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# APPENDIX C. FINAL MODEL ROUTING PLAN

     This appendix contains the routing information pertaining to the final network model. The messages are routed in the same manner as those in the initial model contained in Appendix B.

# MESSAGE ROUTING WITHIN ELB ARCHITECTURE

*Note: The attribute value of the DESTINATION ACCESS POINT is used to make all routing decisions.*

Messages Leaving Access Point # 1

| VRC# | CATCH BLOCK |
|---|---|
| 1 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | INTERNAL |
| 2-48 | VRC 1 |

Messages Leaving Access Point # 2

| VRC# | CATCH BLOCK |
|---|---|
| 1 | 2 |
| 2 | 1 |
| 4 | 2 |

88

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC 1 |
| 2 | INTERNAL |
| 3 | 3 |
| 4-15 | VRC 2 |
| 16-17 | VRC 4 |
| 18-48 | VRC 2 |

Messages Leaving Access Point # 3

| VRC# | CATCH BLOCK |
|---|---|
| 1 | 3 |
| 2 | 2 |
| 4 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC 1 |
| 2 | AP2 |
| 3 | INTERNAL |
| 4-15 | VRC 2 |
| 16-17 | VRC 4 |
| 18-48 | VRC 2 |

| VRC# | CATCH BLOCK |
|:---:|:---:|
| 2 | 3 |
| 3 | 2 |
| 5 | 1 |
| 6 | 3 |
| 9 | 1 |
| 12 | 3 |
| 15 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|:---:|:---:|
| 1-3 | VRC 2 |
| 4 | INTERNAL |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |

| | |
|---|---|
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving Access Point # 5

| VRC# | CATCH BLOCK |
|---|---|
| 2 | 4 |
| 3 | 3 |
| 5 | 2 |
| 6 | 4 |
| 9 | 2 |
| 12 | 4 |
| 15 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | INTERNAL |
| 6-11 | VRC 15 |
| 12 | AP12 |

| 13 | AP13 |
|---|---|
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving Access Point # 6

| VRC# | CATCH BLOCK |
|---|---|
| 15 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-5 | VRC 15 |
| 6 | INTERNAL |
| 7 | AP7 |
| 8 | AP8 |
| 9 | AP9 |
| 10 | AP10 |
| 11 | AP11 |
| 12-48 | VRC 15 |

## Messages Leaving Access Point # 7

| VRC# | CATCH BLOCK |
|------|-------------|
| 15 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-5 | VRC 15 |
| 6 | AP6 |
| 7 | INTERNAL |
| 8 | AP8 |
| 9 | AP9 |
| 10 | AP10 |
| 11 | AP11 |
| 12-48 | VRC 15 |

## Messages Leaving Access Point # 8

| VRC# | CATCH BLOCK |
|------|-------------|
| 15 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC 15 |
| 6 | AP6 |
| 7 | AP7 |
| 8 | INTERNAL |
| 9 | AP9 |
| 10 | AP10 |
| 11 | AP11 |
| 12-48 | VRC 15 |

## Messages Leaving Access Point # 9

| VRC# | CATCH BLOCK |
|---|---|
| 15 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-5 | VRC 15 |
| 6 | AP6 |
| 7 | AP7 |
| 8 | AP8 |
| 9 | INTERNAL |
| 10 | AP10 |

| 11 | AP11 |
|---|---|
| 12-48 | VRC 15 |

Messages Leaving Access Point # 10

| VRC# | CATCH BLOCK |
|---|---|
| 15 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-5 | VRC 15 |
| 6 | AP6 |
| 7 | AP7 |
| 8 | AP8 |
| 9 | AP9 |
| 10 | INTERNAL |
| 11 | AP11 |
| 12-48 | VRC 15 |

## Messages Leaving Access Point # 11

| VRC# | CATCH BLOCK |
|------|-------------|
| 15 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---------------------------------------------|-------------------------------------|
| 1-5 | VRC 15 |
| 6 | AP6 |
| 7 | AP7 |
| 8 | AP8 |
| 9 | AP9 |
| 10 | AP10 |
| 11 | INTERNAL |
| 12-48 | VRC 15 |

## Messages Leaving Access Point # 12

| VRC# | CATCH BLOCK |
|------|-------------|
| 2 | 5 |
| 3 | 3 |
| 5 | 2 |
| 6 | 1 |

| | |
|---|---|
| 9 | 3 |
| 12 | 5 |
| 15 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | INTERNAL |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving Access Point # 13

| VRC# | CATCH BLOCK |
|---|---|
| 2 | 1 |

| 3 | 5 |
|---|---|
| 5 | 3 |
| 6 | 2 |
| 9 | 4 |
| 12 | 1 |
| 15 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | INTERNAL |
| 14-15 | VRC 3 |
| 16 | VRC 2 |
| 17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving Access Point # 14

| VRC# | CATCH BLOCK |
|---|---|
| 3 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-13 | VRC 3 |
| 14 | INTERNAL |
| 15 | AP15 |
| 16-48 | VRC 3 |

Messages Leaving Access Point # 15

| VRC# | CATCH BLOCK |
|---|---|
| 14 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-14 | 14 |
| 15 | INTERNAL |
| 16-48 | 14 |
| 43 | 14 |

## Messages Leaving Access Point # 16

| VRC# | CATCH BLOCK |
|------|-------------|
| 4 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-15 | VRC 4 |
| 15 | VRC 4 |
| 16 | INTERNAL |
| 17 | AP17 |
| 18-48 | VRC 4 |

## Messages Leaving Access Point # 17

| VRC# | CATCH BLOCK |
|------|-------------|
| 16 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-16 | AP16 |
| 17 | INTERNAL |
| 18-48 | AP16 |

## Messages Leaving Access Point # 18

| VRC# | CATCH BLOCK |
|------|-------------|
| 5    | 1           |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---------------------------------------------|-------------------------------------|
| 1-17                                        | VRC 5                               |
| 18                                          | INTERNAL                            |
| 19                                          | AP19                                |
| 20                                          | AP20                                |
| 21                                          | AP21                                |
| 22-48                                       | VRC 5                               |

## Messages Leaving Access Point # 19

| VRC# | CATCH BLOCK |
|------|-------------|
| 5    | 3           |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---------------------------------------------|-------------------------------------|
| 1-17                                        | VRC 5                               |
| 18                                          | AP18                                |

101

| | |
|---|---|
| 19 | INTERNAL |
| 20 | AP20 |
| 21 | AP21 |
| 22-48 | VRC 5 |

Messages Leaving Access Point # 20

| VRC# | CATCH BLOCK |
|---|---|
| 5 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-17 | VRC 5 |
| 18 | AP18 |
| 19 | AP19 |
| 20 | INTERNAL |
| 21 | AP21 |
| 22-48 | VRC 5 |

## Messages Leaving Access Point # 21

| VRC# | CATCH BLOCK |
|------|-------------|
| 5 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-17 | VRC 5 |
| 18 | AP18 |
| 19 | AP19 |
| 20 | AP20 |
| 21 | INTERNAL |
| 22-48 | VRC 5 |

## Messages Leaving Access Point # 22

| VRC# | CATCH BLOCK |
|------|-------------|
| 6 | 1 |
| 7 | 2 |
| 8 | 2 |

103

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | INTERNAL |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving Access Point # 23

| VRC# | CATCH BLOCK |
|---|---|
| 7 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-22 | VRC 7 |
| 23 | INTERNAL |
| 24-48 | VRC 7 |

## Messages Leaving Access Point # 24

| VRC# | CATCH BLOCK |
|------|-------------|
| 8 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-23 | VRC 8 |
| 24 | INTERNAL |
| 25-48 | VRC 8 |

## Messages Leaving Access Point # 25

| VRC# | CATCH BLOCK |
|------|-------------|
| 6 | 5 |
| 7 | 3 |
| 8 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |

| | |
|---|---|
| 24 | VRC 8 |
| 25 | INTERNAL |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving Access Point # 26

| VRC# | CATCH BLOCK |
|---|---|
| 6 | 1 |
| 7 | 4 |
| 8 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | INTERNAL |

| | |
|---|---|
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving Access Point # 27

| VRC# | CATCH BLOCK |
|---|---|
| 6 | 2 |
| 7 | 5 |
| 8 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | INTERNAL |
| 28 | AP28 |
| 29 | AP29 |

| | |
|---|---|
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving Access Point # 28

| VRC# | CATCH BLOCK |
|---|---|
| 6 | 3 |
| 7 | 1 |
| 8 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | INTERNAL |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving Access Point # 29

| VRC# | CATCH BLOCK |
|------|-------------|
| 6 | 4 |
| 7 | 2 |
| 8 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | INTERNAL |
| 30 | AP30 |
| 31-48 | VRC 6 |

| VRC# | CATCH BLOCK |
|---|---|
| 6 | 5 |
| 7 | 3 |
| 8 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | INTERNAL |
| 31-48 | VRC 6 |

| VRC# | CATCH BLOCK |
|------|-------------|
| 9 | 5 |
| 10 | 2 |
| 11 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-30 | VRC 9 |
| 31 | INTERNAL |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

## Messages Leaving Access Point # 32

| VRC# | CATCH BLOCK |
|------|-------------|
| 10 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|-------------------------------------|
| 1-31 | VRC 10 |
| 32 | INTERNAL |
| 33-48 | VRC 10 |

## Messages Leaving Access Point # 33

| VRC# | CATCH BLOCK |
|------|-------------|
| 11 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|-------------------------------------|
| 1-32 | VRC 11 |
| 33 | INTERNAL |
| 34-48 | VRC 11 |

| VRC# | CATCH BLOCK |
|------|-------------|
| 9 | 1 |
| 10 | 3 |
| 11 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|-------------------------------------|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | INTERNAL |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

Messages Leaving Access Point # 35

| VRC# | CATCH BLOCK |
|---|---|
| 9 | 2 |
| 10 | 4 |
| 11 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | INTERNAL |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

114

| VRC# | CATCH BLOCK |
|---|---|
| 9 | 3 |
| 10 | 5 |
| 11 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | INTERNAL |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

| VRC# | CATCH BLOCK |
|---|---|
| 9 | 4 |
| 10 | 1 |
| 11 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | INTERNAL |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

116

| VRC# | CATCH BLOCK |
|---|---|
| 9 | 5 |
| 10 | 2 |
| 11 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | INTERNAL |
| 39 | AP39 |
| 40-48 | VRC 9 |

| VRC# | CATCH BLOCK |
|---|---|
| 9 | 1 |
| 10 | 3 |
| 11 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | INTERNAL |
| 40-48 | VRC 9 |

Messages Leaving Access Point # 40

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 1 |
| 13 | 3 |
| 14 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | INTERNAL |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | AP45 |
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

## Messages Leaving Access Point # 41

| VRC# | CATCH BLOCK |
|------|-------------|
| 14 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-40 | VRC 14 |
| 41 | INTERNAL |
| 42-48 | VRC 14 |

## Messages Leaving Access Point # 42

| VRC# | CATCH BLOCK |
|------|-------------|
| 13 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-41 | VRC 13 |
| 42 | INTERNAL |
| 43-48 | VRC 13 |

Messages Leaving Access Point # 43

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 2 |
| 13 | 2 |
| 14 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | INTERNAL |
| 44 | AP44 |
| 45 | AP45 |
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 3 |
| 13 | 3 |
| 14 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | INTERNAL |
| 45 | AP45 |
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

## Messages Leaving Access Point # 45

| VRC# | CATCH BLOCK |
|------|-------------|
| 12 | 4 |
| 13 | 4 |
| 14 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|-------------------------------------|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | INTERNAL |
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

## Messages Leaving Access Point # 46

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 5 |
| 13 | 5 |
| 14 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | AP45 |
| 46 | INTERNAL |
| 47 | AP47 |
| 48 | AP48 |

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 1 |
| 13 | 1 |
| 14 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | AP45 |
| 46 | AP46 |
| 47 | INTERNAL |
| 48 | AP48 |

## Messages Leaving Access Point # 48

| VRC# | CATCH BLOCK |
|---|---|
| 12 | 2 |
| 13 | 2 |
| 14 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | AP45 |
| 46 | AP46 |
| 47 | AP47 |
| 48 | INTERNAL |

## Messages Leaving VRC-99 # 1

| VRC # | CATCH BLOCK |
|-------|-------------|
| 2 | 2 |
| 4 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1 | AP1 |
| 2 | AP2 |
| 3 | AP3 |
| 4-15 | VRC 2 |
| 16-17 | VRC 4 |
| 18-48 | VRC 2 |

## Messages Leaving VRC-99 # 2

| VRC # | CATCH BLOCK |
|-------|-------------|
| 1 | 1 |
| 3 | 3 |
| 4 | 5 |
| 5 | 2 |

| 6 | 4 |
|---|---|
| 9 | 4 |
| 12 | 2 |
| 15 | 1 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC 1 |
| 2 | AP2 |
| 3 | AP3 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 4 |
| 18-21 | VRC 5 |
| 22 | VRC 6 |
| 23-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

| VRC # | CATCH BLOCK |
|-------|-------------|
| 2 | 4 |
| 5 | 3 |
| 6 | 2 |
| 9 | 2 |
| 12 | 3 |
| 15 | 2 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---------------------------------------------|-------------------------------------|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14 | AP14 |
| 15 | AP14 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |

129

| 40-48 | VRC 12 |
|---|---|

Messages Leaving VRC-99 # 4

| VRC # | CATCH BLOCK |
|---|---|
| 1 | 4 |
| 2 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1 | VRC 1 |
| 2 | AP2 |
| 3 | AP3 |
| 4-15 | VRC 2 |
| 16 | AP16 |
| 17 | AP16 |
| 18-48 | VRC 2 |

| VRC # | CATCH BLOCK |
|---|---|
| 2 | 5 |
| 3 | 3 |
| 6 | 5 |
| 9 | 2 |
| 12 | 5 |
| 15 | 3 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18 | AP18 |
| 19 | AP19 |
| 20 | AP20 |
| 21 | AP21 |

| | |
|---|---|
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving VRC-99 # 6

| VRC # | CATCH BLOCK |
|---|---|
| 2 | 1 |
| 3 | 4 |
| 5 | 2 |
| 7 | 5 |
| 8 | 5 |
| 9 | 3 |
| 12 | 1 |
| 15 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |

132

| | |
|---|---|
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22 | AP22 |
| 23 | VRC 7 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

Messages Leaving VRC-99 # 7

| VRC # | CATCH BLOCK |
|---|---|
| 6 | 1 |
| 8 | 4 |

133

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |
| 23 | AP23 |
| 24 | VRC 8 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving VRC-99 # 8

| VRC # | CATCH BLOCK |
|---|---|
| 6 | 2 |
| 7 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-21 | VRC 6 |
| 22 | AP22 |

134

| | |
|---|---|
| 23 | VRC 7 |
| 24 | AP24 |
| 25 | AP25 |
| 26 | AP26 |
| 27 | AP27 |
| 28 | AP28 |
| 29 | AP29 |
| 30 | AP30 |
| 31-48 | VRC 6 |

Messages Leaving VRC-99 # 9

| VRC # | CATCH BLOCK |
|---|---|
| 2 | 2 |
| 3 | 5 |
| 5 | 3 |
| 6 | 3 |
| 10 | 4 |
| 11 | 4 |
| 12 | 2 |
| 15 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31 | 31 |
| 32 | VRC 10 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 12 |

| VRC # | CATCH BLOCK |
|-------|-------------|
| 9 | 5 |
| 11 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---------------------------------------------|------------------------------------|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | AP32 |
| 33 | VRC 11 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

Messages Leaving VRC-99 # 11

| VRC # | CATCH BLOCK |
|-------|-------------|

| | |
|---|---|
| 9 | 1 |
| 10 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-30 | VRC 9 |
| 31 | AP31 |
| 32 | VRC 10 |
| 33 | AP33 |
| 34 | AP34 |
| 35 | AP35 |
| 36 | AP36 |
| 37 | AP37 |
| 38 | AP38 |
| 39 | AP39 |
| 40-48 | VRC 9 |

Messages Leaving VRC-99 # 12

| VRC # | CATCH BLOCK |
|---|---|
| 3 | 1 |
| 5 | 4 |
| 6 | 4 |

| | |
|---|---|
| 9 | 4 |
| 13 | 4 |
| 14 | 4 |
| 15 | 1 |
| 2 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6-11 | VRC 15 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |
| 22-30 | VRC 6 |
| 31-39 | VRC 9 |
| 40 | 40 |
| 41 | VRC 14 |
| 42 | VRC 13 |
| 43 | AP43 |
| 44 | AP44 |

| 45 | AP45 |
|---|---|
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

Messages Leaving VRC-99 # 13

| VRC # | CATCH BLOCK |
|---|---|
| 12 | 3 |
| 14 | 5 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-39 | VRC 12 |
| 40 | AP40 |
| 41 | VRC 14 |
| 42 | AP42 |
| 43 | AP43 |
| 44 | AP44 |
| 45 | AP45 |
| 46 | AP46 |
| 47 | AP47 |
| 48 | AP48 |

Messages Leaving VRC-99 # 14

140

| VRC # | CATCH BLOCK |
|-------|-------------|
| 12    | 4           |
| 13    | 5           |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|--------------------------------------------|------------------------------------|
| 1-39 | VRC 12 |
| 40   | AP40   |
| 41   | AP41   |
| 42   | VRC 13 |
| 43   | AP43   |
| 44   | AP44   |
| 45   | AP45   |
| 46   | AP46   |
| 47   | AP47   |
| 48   | AP48   |

Messages Leaving VRC-99 # 15

| VRC # | CATCH BLOCK |
|---|---|
| 2 | 3 |
| 3 | 1 |
| 5 | 1 |
| 6 | 3 |
| 9 | 3 |
| 12 | 4 |

| Attribute Value (Destination Access Point) | Catch (Next Access Point in Route) |
|---|---|
| 1-3 | VRC 2 |
| 4 | AP4 |
| 5 | AP5 |
| 6 | AP6 |
| 7 | AP7 |
| 8 | AP8 |
| 9 | AP9 |
| 10 | AP10 |
| 11 | AP11 |
| 12 | AP12 |
| 13 | AP13 |
| 14-15 | VRC 3 |
| 16-17 | VRC 2 |
| 18-21 | VRC 5 |

| 22-30 | VRC 6 |
|-------|-------|
| 31-39 | VRC 9 |
| 40-48 | VRC 12 |

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# APPENDIX D.  FINAL MODEL TEST DATA

This appendix contains the final model test statistical data.  The Access Points chosen for the collection of data are depicted graphically with the use of a Plotter graph inherent to the Extend modeling software.  The graph displays the delay experienced within each of the tested Access Points over the period of the model.  Also contained within this appendix is the statistical data collected from the Access Points in table format.  The data shows the respective Access Points, the message's Origin Access Point, the arrival time of the message and the delay associated with the message.

Run 0 AP1



Run 0 AP 4

146

Run 0 AP 5



Run 0 AP 9

147

Run 0 AP 12



Run 0 AP 15

148

Run 0 AP 17



Run 0 AP 20

149
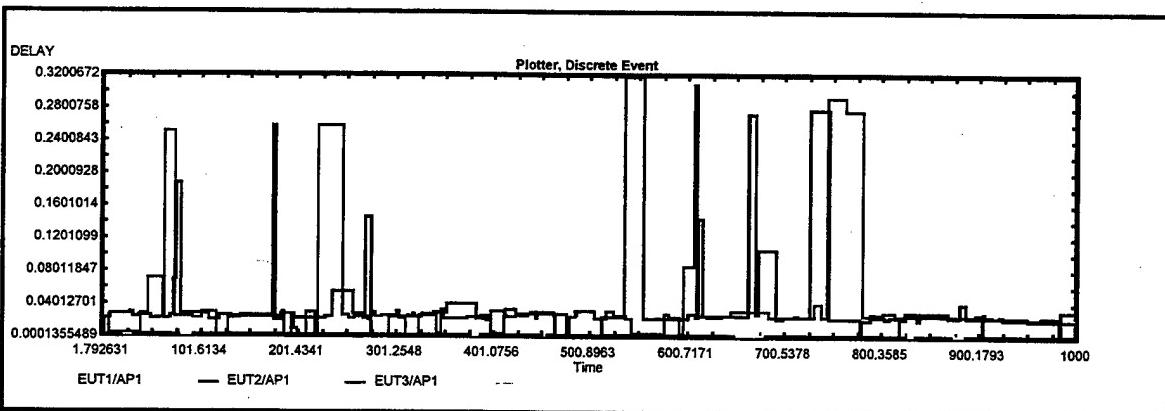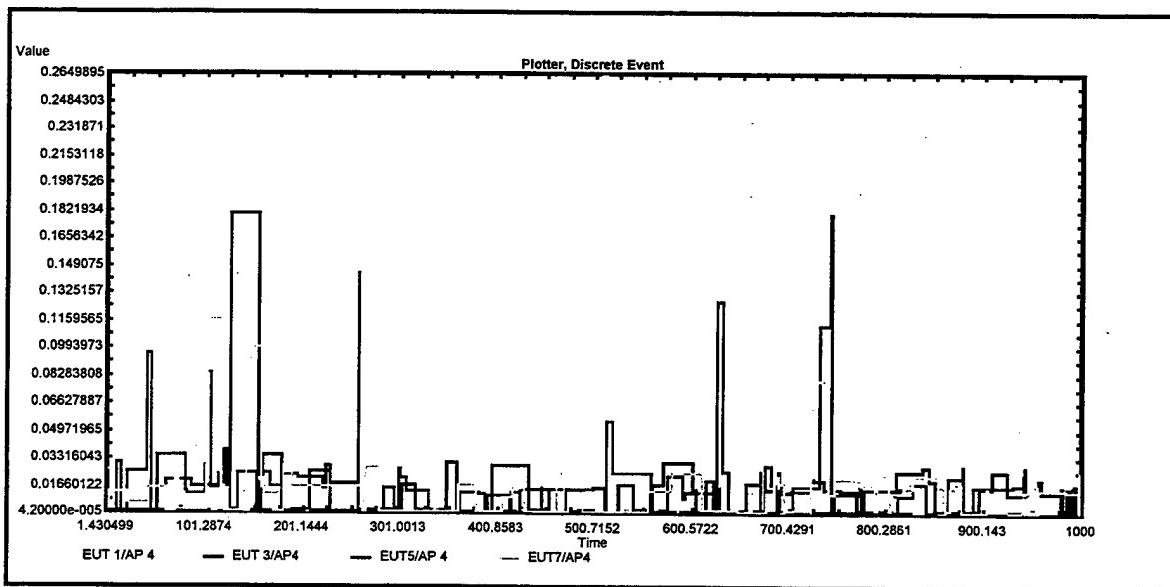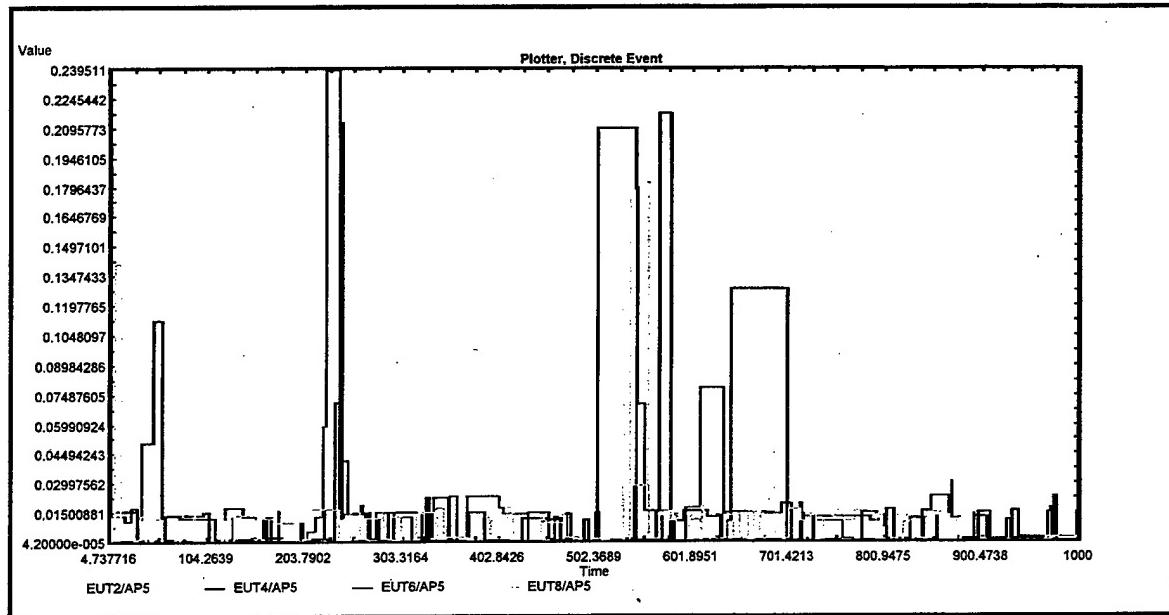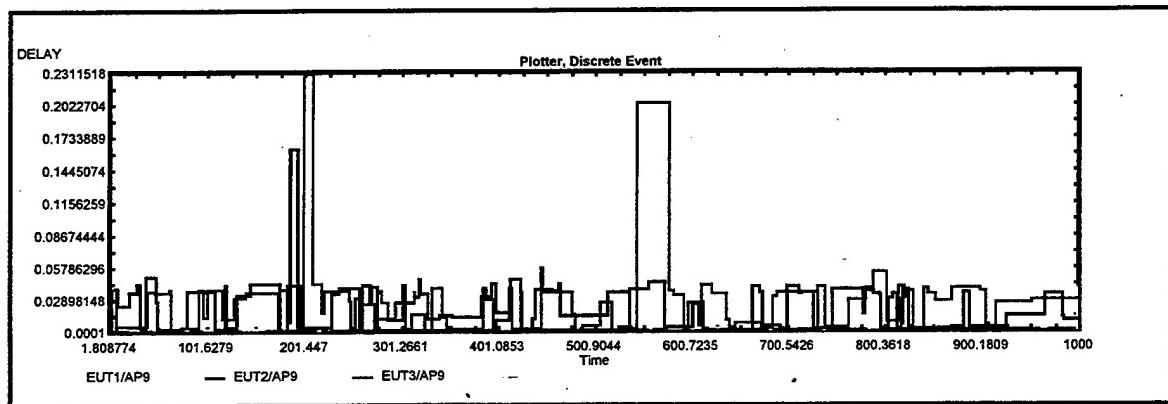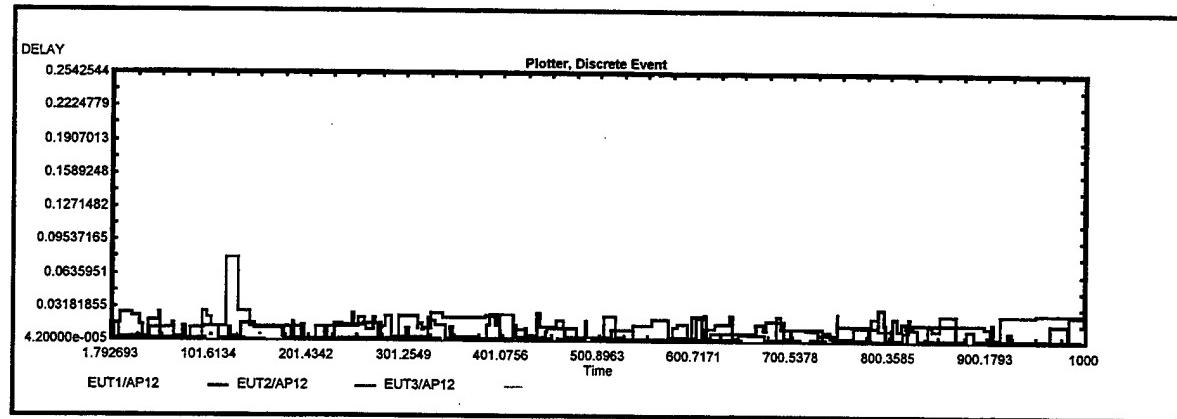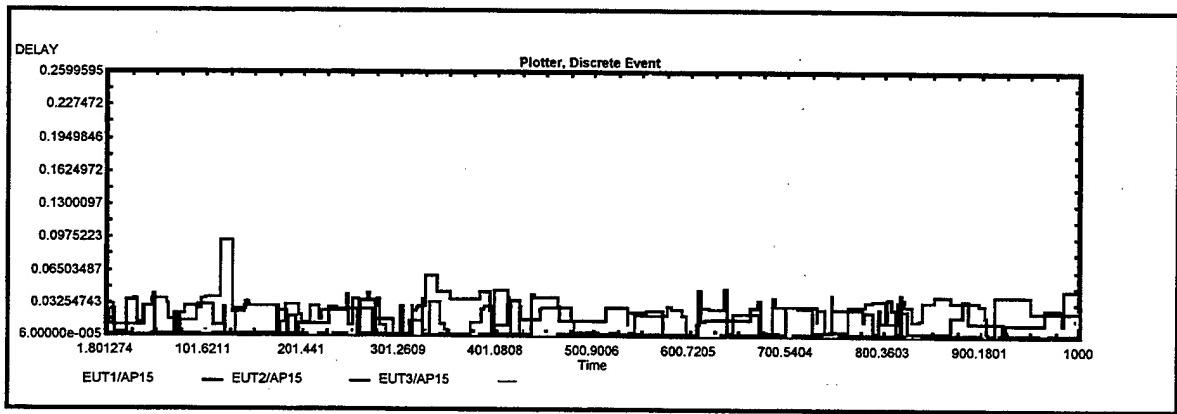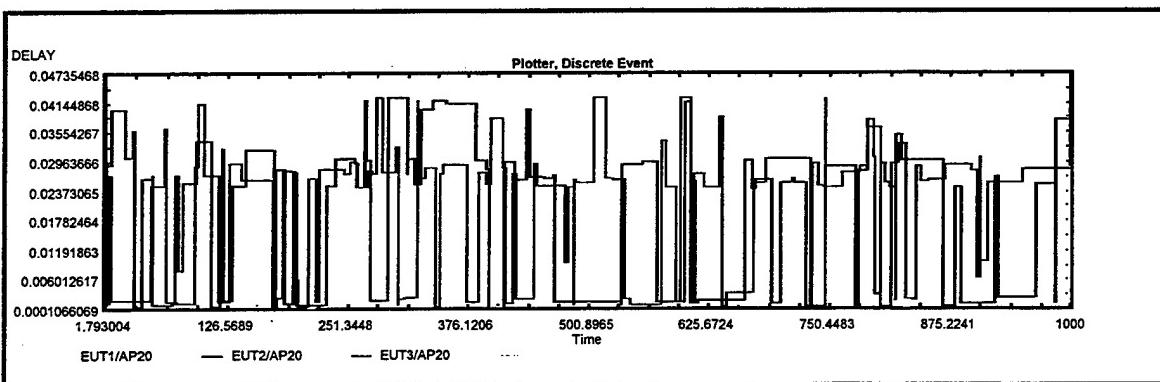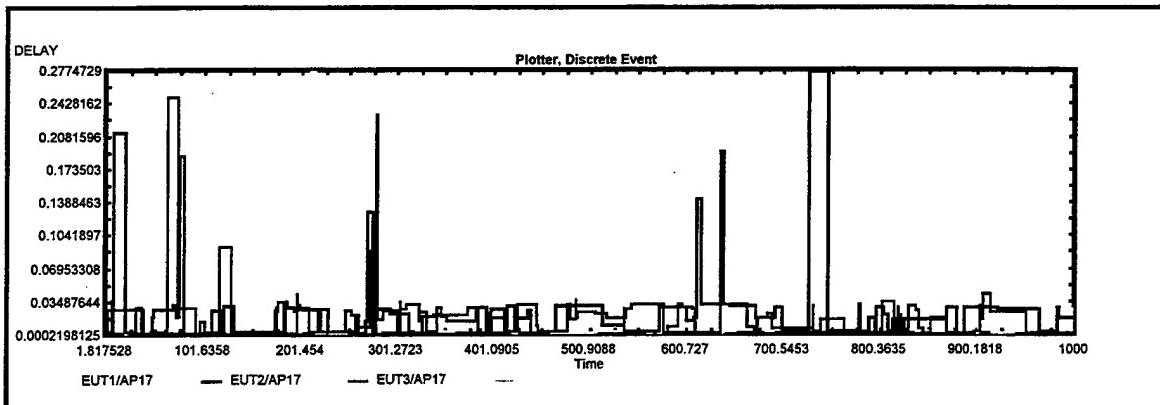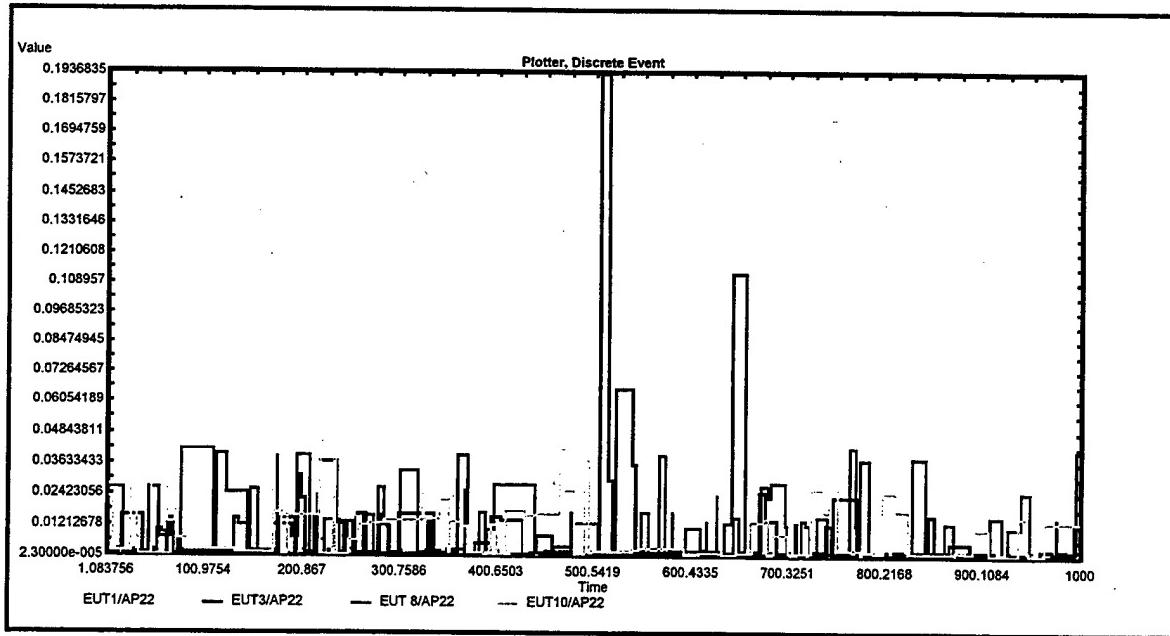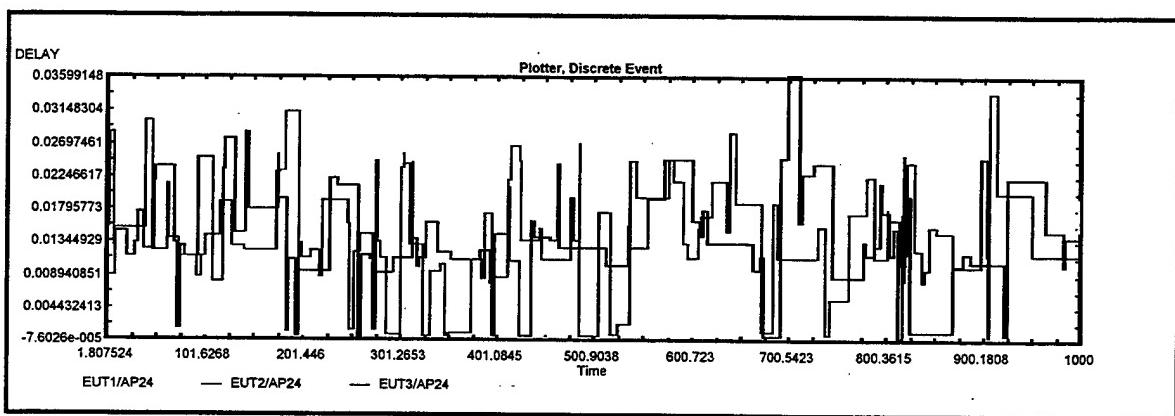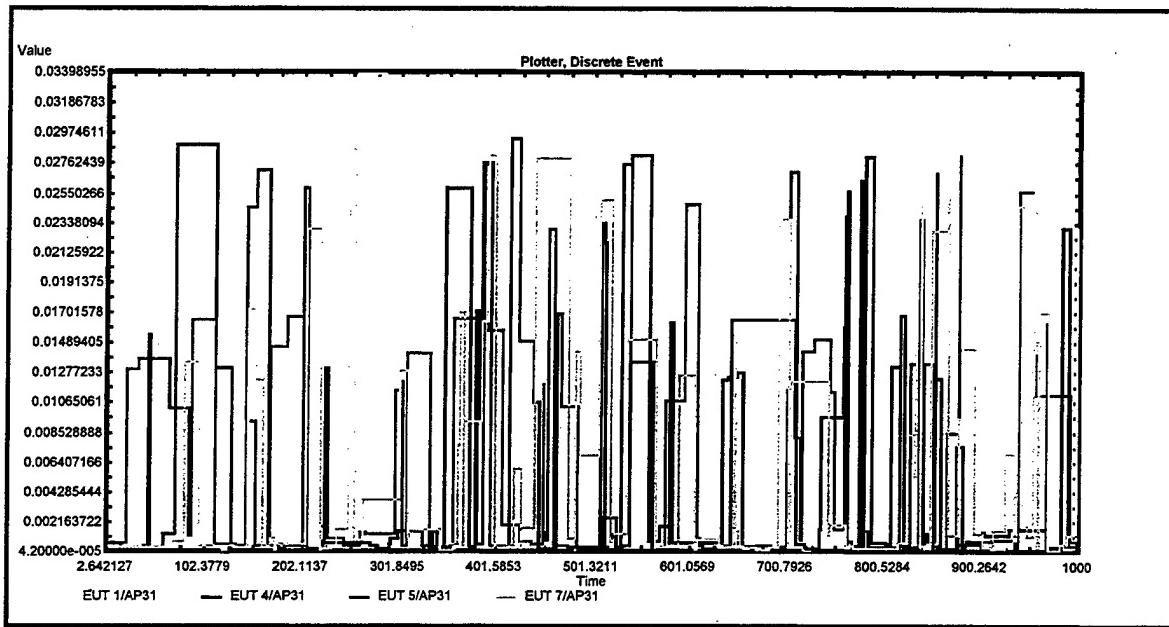
Run 0 AP22



Run 0 AP 24

Run 0 AP31



Run 0 AP40

151

Run 0 AP 41

152
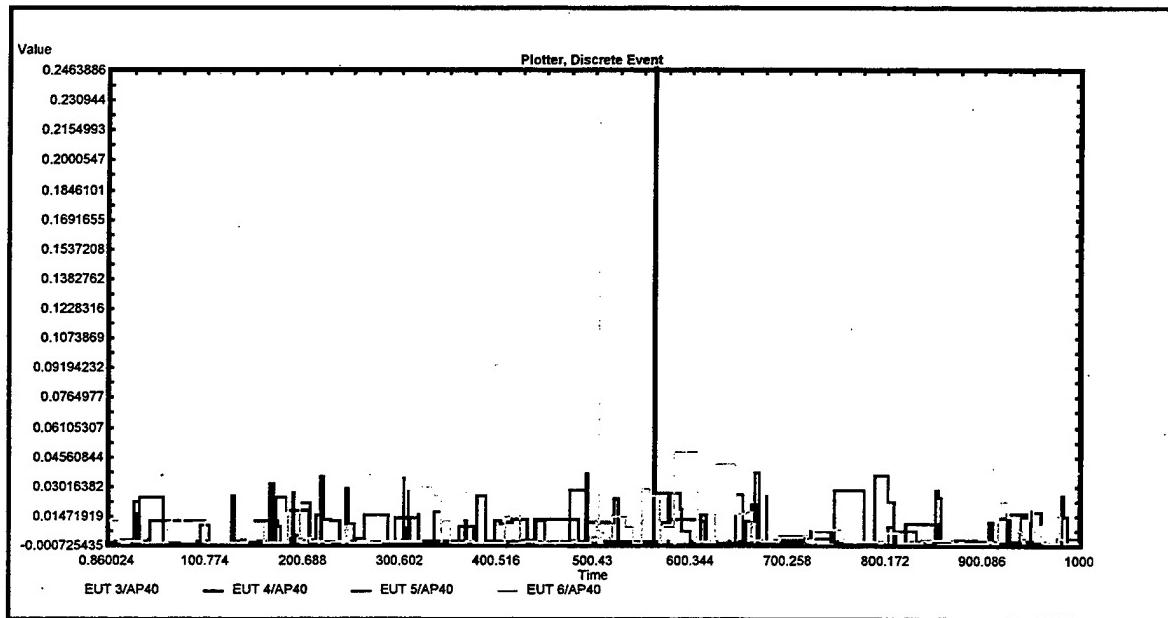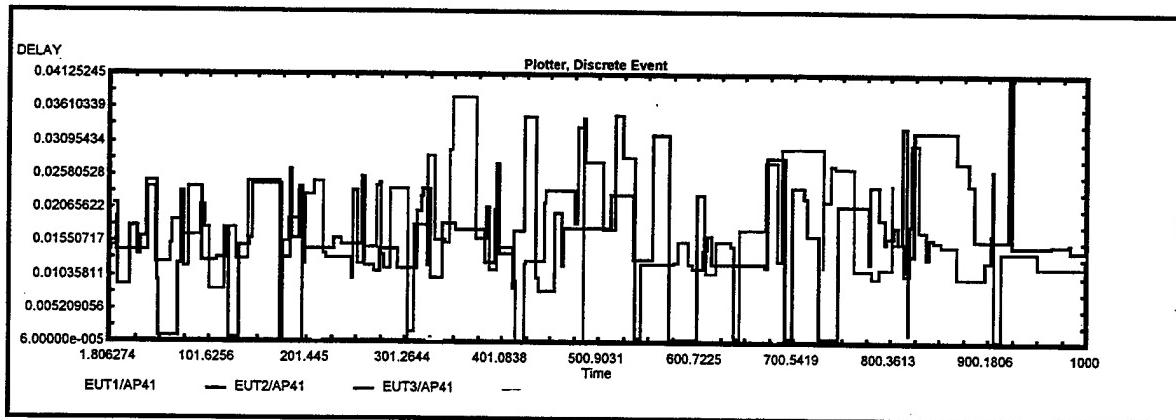
Extend Dialog Report - 5/6/00 11:07:41 PM
Run #0
INFORMATION  RUN 0 VTC W/AP 1 AT 500 SEC.  2 MB

Information                    **block number 629**
Input Parameters:

| Arrival Time | time differe | COMMTYPE | OriginAP |
|---|---|---|---|
| 914.86877 | 0.022554318 | 5.0000000 | 4.0000000 |
| 951.14377 | 0.018963601 | 4.0000000 | 5.0000000 |

Information                    **block number 969**
Input Parameters:

| Arrival Time | time differe | COMMTYPE | OriginAP |
|---|---|---|---|
| 945.74377 | 0.024629545 | 4.0000000 | 5.0000000 |
| 949.96877 | 0.020570234 | 4.0000000 | 5.0000000 |
| 962.31877 | 0.02000621 | 4.0000000 | 4.0000000 |
| 966.38752 | 0.019698726 | 4.0000000 | 5.0000000 |
| 978.18752 | 0.0194543 | 4.0000000 | 5.0000000 |
| 999.10627 | 0.019876336 | 4.0000000 | 4.0000000 |

Information                    **block number 4915**
Input Parameters:

| Arrival Time | time differe | COMMTYPE | OriginAP |
|---|---|---|---|
| 1.7930044 | 0.00076652821 | 5.0000000 | 19.000000 |
| 2.5462740 | 0.029112199 | 4.0000000 | 36.000000 |
| 3.0113645 | 0.00096727866 | 6.0000000 | 19.000000 |
| 8.6900240 | 0.026537747 | 4.0000000 | 37.000000 |
| 8.8824717 | 0.005127996 | 8.0000000 | 19.000000 |
| 9.7250660 | 0.0014634259 | 6.0000000 | 19.000000 |
| 49.033774 | 0.024583597 | 4.0000000 | 38.000000 |
| 63.452524 | 0.036170082 | 7.0000000 | 36.000000 |
| 65.145091 | 0.0012006599 | 5.0000000 | 19.000000 |
| 75.903429 | 0.00087666261 | 7.0000000 | 20.000000 |
| 93.558774 | 0.028380377 | 7.0000000 | 37.000000 |
| 97.902524 | 0.041177229 | 4.0000000 | 33.000000 |
| 102.85877 | 0.026612496 | 8.0000000 | 39.000000 |
| 118.30243 | 0.001160254 | 6.0000000 | 19.000000 |
| 129.89002 | 0.028894599 | 4.0000000 | 35.000000 |
| 141.82752 | 0.025820401 | 4.0000000 | 37.000000 |
| 175.01887 | 0.00037511693 | 4.0000000 | 21.000000 |
| 178.58680 | 0.0022183235 | 5.0000000 | 20.000000 |
| 185.01502 | 0.027471016 | 5.0000000 | 36.000000 |
| 197.78146 | 0.0057662357 | 5.0000000 | 19.000000 |
| 201.15299 | 0.00037219126 | 4.0000000 | 19.000000 |
| 210.64627 | 0.025842666 | 4.0000000 | 38.000000 |
| 219.61280 | 0.001207984 | 5.0000000 | 18.000000 |
| 222.16502 | 0.027762465 | 5.0000000 | 36.000000 |
| 248.74002 | 0.026957875 | 4.0000000 | 34.000000 |
| 249.50252 | 0.026936567 | 4.0000000 | 31.000000 |
| 254.59002 | 0.029439322 | 4.0000000 | 34.000000 |
| 259.96502 | 0.024319174 | 4.0000000 | 35.000000 |
| 273.32752 | 0.027633776 | 4.0000000 | 31.000000 |
| 276.84627 | 0.026910534 | 5.0000000 | 36.000000 |
| 281.70252 | 0.042375658 | 4.0000000 | 32.000000 |
| 287.61502 | 0.027073478 | 4.0000000 | 31.000000 |
| 302.87752 | 0.032249845 | 5.0000000 | 36.000000 |
| 305.29781 | 0.00063941708 | 4.0000000 | 21.000000 |
| 305.67543 | 0.001947422 | 5.0000000 | 21.000000 |
| 311.24043 | 0.0021049477 | 4.0000000 | 18.000000 |
| 325.20252 | 0.041518689 | 7.0000000 | 33.000000 |
| 325.97752 | 0.026010643 | 4.0000000 | 31.000000 |
| 332.87752 | 0.0280149 | 7.0000000 | 39.000000 |
| 343.60408 | 0.00048281561 | 4.0000000 | 18.000000 |
| 348.37127 | 0.026952503 | 8.0000000 | 31.000000 |
| 350.70877 | 0.028710927 | 4.0000000 | 31.000000 |
| 375.64171 | 0.0012791225 | 4.0000000 | 19.000000 |
| 388.36502 | 0.0270795 | 4.0000000 | 34.000000 |
| 395.95252 | 0.024868759 | 5.0000000 | 31.000000 |
| 400.12752 | 0.038121767 | 7.0000000 | 33.000000 |
| 412.47127 | 0.027975533 | 4.0000000 | 39.000000 |
| 416.62211 | 0.00097737105 | 4.0000000 | 21.000000 |
| 424.55252 | 0.026934402 | 7.0000000 | 36.000000 |
| 427.51478 | 0.002043588 | 5.0000000 | 20.000000 |

153

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|---|---|---|---|---|
| 445.82752 | 0.028898131 | 5.0000000 | 37.000000 | |
| 448.65252 | 0.024534562 | 4.0000000 | 38.000000 | |
| 477.67225 | 0.0091834523 | 5.0000000 | 19.000000 | |
| 481.50877 | 0.024281504 | 5.0000000 | 31.000000 | |
| 486.57776 | 0.00078505631 | 5.0000000 | 21.000000 | |
| 486.93377 | 0.025651669 | 4.0000000 | 31.000000 | |
| 488.23377 | 0.02506919 | 5.0000000 | 31.000000 | |
| 506.85877 | 0.042251855 | 7.0000000 | 32.000000 | |
| 519.65877 | 0.026089293 | 4.0000000 | 31.000000 | |
| 526.66502 | 0.025776601 | 4.0000000 | 31.000000 | |
| 538.64392 | 0.0020432086 | 4.0000000 | 21.000000 | |
| 545.17643 | 0.00081072625 | 5.0000000 | 18.000000 | |
| 577.39627 | 0.033450513 | 5.0000000 | 36.000000 | |
| 582.89627 | 0.024163309 | 4.0000000 | 36.000000 | |
| 593.66434 | 0.0012251977 | 4.0000000 | 19.000000 | |
| 598.34627 | 0.042377186 | 4.0000000 | 33.000000 | |
| 608.08704 | 0.00090999976 | 5.0000000 | 19.000000 | |
| 611.45877 | 0.026824734 | 4.0000000 | 35.000000 | |
| 622.54627 | 0.024100775 | 4.0000000 | 36.000000 | |
| 637.22752 | 0.038371632 | 4.0000000 | 33.000000 | |
| 640.60716 | 0.00038566137 | 4.0000000 | 21.000000 | |
| 646.10471 | 0.0032130835 | 8.0000000 | 19.000000 | |
| 672.89627 | 0.025161811 | 5.0000000 | 31.000000 | |
| 686.17127 | 0.029802041 | 4.0000000 | 34.000000 | |
| 731.94515 | 0.00017361982 | 4.0000000 | 19.000000 | |
| 732.74002 | 0.029111512 | 4.0000000 | 38.000000 | |
| 739.60877 | 0.024530283 | 4.0000000 | 31.000000 | |
| 745.07127 | 0.024117452 | 5.0000000 | 31.000000 | |
| 764.04002 | 0.027237971 | 7.0000000 | 34.000000 | |
| 782.57752 | 0.028490937 | 7.0000000 | 39.000000 | |
| 789.80252 | 0.036162526 | 4.0000000 | 38.000000 | |
| 803.82127 | 0.031573897 | 5.0000000 | 37.000000 | |
| 803.96677 | 0.00054242166 | 4.0000000 | 20.000000 | |
| 815.55877 | 0.029022014 | 5.0000000 | 39.000000 | |
| 821.68377 | 0.029080841 | 6.0000000 | 34.000000 | |
| 822.44002 | 0.03293616 | 5.0000000 | 36.000000 | |
| 830.89743 | 0.0019019936 | 5.0000000 | 19.000000 | |
| 838.50137 | 0.0016901623 | 7.0000000 | 20.000000 | |
| 841.66502 | 0.028276844 | 5.0000000 | 39.000000 | |
| 845.82752 | 0.025419386 | 4.0000000 | 35.000000 | |
| 853.95252 | 0.025797258 | 4.0000000 | 34.000000 | |
| 870.31502 | 0.028644964 | 4.0000000 | 39.000000 | |
| 898.20877 | 0.02740592 | 4.0000000 | 36.000000 | |
| 904.50200 | .0.006027715 | 5.0000000 | 19.000000 | |
| 906.93377 | 0.03027945 | 5.0000000 | 31.000000 | |
| 908.04831 | 0.0095579634 | 4.0000000 | 21.000000 | |
| 914.87127 | 0.025054318 | 6.0000000 | 34.000000 | |
| 951.15252 | 0.027713601 | 5.0000000 | 34.000000 | |

Information **block number 7542**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 2.5462740 | | 0.025481492 | 5.0000000 | 17.000000 |
| 5.5375240 | | 0.011643057 | 4.0000000 | 40.000000 |
| 23.040678 | | 0.0053402101 | 8.0000000 | 5.0000000 |
| 42.075024 | | 0.01424335 | 6.0000000 | 40.000000 |
| 61.682163 | | 0.00033898631 | 4.0000000 | 5.0000000 |
| 71.468774 | | 0.022060904 | 4.0000000 | 18.000000 |
| 74.855329 | 1.0000000 | 0.00068660676 | 5.0000000 | 4.0000000 |
| 102.37836 | 1.0000000 | 0.11508533 | 7.0000000 | 5.0000000 |
| 118.59377 | 1.0000000 | 0.015000464 | 4.0000000 | 40.000000 |
| 122.03803 | 1.0000000 | 0.00023649927 | 6.0000000 | 5.0000000 |
| 139.86252 | 1.0000000 | 0.011968248 | 5.0000000 | 14.000000 |
| 144.38377 | 1.0000000 | 0.090911308 | 4.0000000 | 17.000000 |
| 149.37803 | 1.0000000 | 0.098498786 | 5.0000000 | 5.0000000 |
| 159.81252 | 1.0000000 | 0.014348332 | 4.0000000 | 22.000000 |
| 162.38752 | 1.0000000 | 0.010411444 | 7.0000000 | 40.000000 |
| 171.77409 | 1.0000000 | 0.00023982005 | 4.0000000 | 5.0000000 |
| 173.23752 | 1.0000000 | 0.011213841 | 5.0000000 | 22.000000 |
| 175.76175 | 1.0000000 | 0.00027689105 | 4.0000000 | 5.0000000 |
| 181.33127 | 1.0000000 | 0.02169872 | 4.0000000 | 18.000000 |
| 181.40252 | 1.0000000 | 0.027885255 | 6.0000000 | 16.000000 |

154

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|---|---|---|---|---|
| 183.83127 | 1.0000000 | 0.023413678 | 6.0000000 | 18.000000 |
| 191.73127 | 1.0000000 | 0.015363793 | 4.0000000 | 14.000000 |
| 238.39377 | 1.0000000 | 0.015462438 | 5.0000000 | 22.000000 |
| 263.82775 | 1.0000000 | 4.2000000e-005 | 5.0000000 | 5.0000000 |
| 267.64627 | 1.0000000 | 0.027096674 | 7.0000000 | 17.000000 |
| 280.44115 | 1.0000000 | 0.00015803645 | 4.0000000 | 4.0000000 |
| 327.75911 | 1.0000000 | 0.00012422465 | 4.0000000 | 5.0000000 |
| 337.20045 | 1.0000000 | 0.00065948045 | 7.0000000 | 4.0000000 |
| 339.49184 | 1.0000000 | 0.00019959397 | 4.0000000 | 4.0000000 |
| 361.11877 | 1.0000000 | 0.015711553 | 4.0000000 | 40.000000 |
| 378.76043 | 1.0000000 | 0.00046946242 | 4.0000000 | 4.0000000 |
| 406.52007 | 1.0000000 | 0.0089149123 | 8.0000000 | 5.0000000 |
| 417.24377 | 1.0000000 | 0.014585741 | 4.0000000 | 14.000000 |
| 422.68127 | 1.0000000 | 0.013918852 | 4.0000000 | 40.000000 |
| 429.79347 | 1.0000000 | 0.00031748525 | 4.0000000 | 5.0000000 |
| 463.16252 | 1.0000000 | 0.023155298 | 6.0000000 | 18.000000 |
| 469.96427 | 1.0000000 | 4.2000000e-005 | 4.0000000 | 5.0000000 |
| 474.51877 | 1.0000000 | 0.011294455 | 4.0000000 | 22.000000 |
| 489.49670 | 1.0000000 | 8.9125380e-005 | 4.0000000 | 4.0000000 |
| 503.08087 | 1.0000000 | 0.0003372739 | 4.0000000 | 5.0000000 |
| 533.47448 | 1.0000000 | 0.0007353631 | 5.0000000 | 12.000000 |
| 537.04489 | 1.0000000 | 0.00042985505 | 4.0000000 | 5.0000000 |
| 557.47502 | 1.0000000 | 0.01263018 | 5.0000000 | 22.000000 |
| 581.62752 | 1.0000000 | 0.023226022 | 5.0000000 | 17.000000 |
| 611.99184 | 1.0000000 | 0.0010365494 | 5.0000000 | 4.0000000 |
| 648.45060 | 1.0000000 | 0.00037576243 | 4.0000000 | 5.0000000 |
| 660.10002 | 1.0000000 | 0.011798163 | 4.0000000 | 40.000000 |
| 660.23127 | 1.0000000 | 0.011810593 | 7.0000000 | 40.000000 |
| 662.78496 | 1.0000000 | 0.0002684102 | 4.0000000 | 4.0000000 |
| 677.89377 | 1.0000000 | 0.01130587 | 4.0000000 | 14.000000 |
| 686.37166 | 1.0000000 | 0.021758707 | 4.0000000 | 5.0000000 |
| 690.06877 | 1.0000000 | 0.014854024 | 5.0000000 | 22.000000 |
| 691.01127 | 1.0000000 | 0.016839859 | 5.0000000 | 31.000000 |
| 697.17879 | 1.0000000 | 0.00086808074 | 5.0000000 | 13.000000 |
| 723.17473 | 1.0000000 | 0.0003864331 | 4.0000000 | 12.000000 |
| 724.37128 | 1.0000000 | 0.22111306 | 4.0000000 | 5.0000000 |
| 726.10877 | 1.0000000 | 0.021551462 | 4.0000000 | 16.000000 |
| 727.37147 | 1.0000000 | 0.079059615 | 7.0000000 | 5.0000000 |
| 742.46877 | 1.0000000 | 0.010712824 | 4.0000000 | 22.000000 |
| 747.37179 | 1.0000000 | 0.01929537 | 6.0000000 | 4.0000000 |
| 770.34002 | 1.0000000 | 0.018979099 | 4.0000000 | 16.000000 |
| 775.99252 | 1.0000000 | 0.015964299 | 5.0000000 | 31.000000 |
| 788.73188 | 1.0000000 | 0.00096104503 | 6.0000000 | 12.000000 |
| 792.74627 | 1.0000000 | 0.022651493 | 4.0000000 | 17.000000 |
| 803.86962 | 1.0000000 | 0.0010994836 | 5.0000000 | 5.0000000 |
| 805.57502 | 1.0000000 | 0.011346304 | 7.0000000 | 40.000000 |
| 822.51752 | 1.0000000 | 0.014726409 | 4.0000000 | 31.000000 |
| 828.26877 | 1.0000000 | 0.021441838 | 4.0000000 | 18.000000 |
| 854.74377 | 1.0000000 | 0.01552071 | 5.0000000 | 22.000000 |
| 860.30369 | 1.0000000 | 0.0074709526 | 8.0000000 | 4.0000000 |
| 861.82842 | 1.0000000 | 0.0010978861 | 5.0000000 | 4.0000000 |
| 866.46252 | 1.0000000 | 0.014514604 | 4.0000000 | 22.000000 |
| 870.50002 | 1.0000000 | 0.017443551 | 8.0000000 | 40.000000 |
| 879.15130 | 1.0000000 | 0.00045473345 | 4.0000000 | 13.000000 |
| 905.11252 | 1.0000000 | 0.014034499 | 6.0000000 | 14.000000 |
| 905.81169 | 1.0000000 | 0.00078457789 | 7.0000000 | 12.000000 |
| 930.76443 | 1.0000000 | 0.00090784272 | 5.0000000 | 5.0000000 |
| 930.79365 | 1.0000000 | 0.0009574995 | 5.0000000 | 5.0000000 |
| 937.41360 | 1.0000000 | 0.00062359703 | 7.0000000 | 13.000000 |
| 941.97502 | 1.0000000 | 0.012920645 | 5.0000000 | 14.000000 |
| 944.40297 | 1.0000000 | 4.2000000e-005 | 5.0000000 | 5.0000000 |
| 946.42502 | 1.0000000 | 0.012017518 | 7.0000000 | 40.000000 |
| 946.94574 | 1.0000000 | 0.00028790078 | 4.0000000 | 5.0000000 |
| 953.86127 | 1.0000000 | 0.016594969 | 5.0000000 | 31.000000 |
| 956.19139 | 1.0000000 | 0.00021185674 | 4.0000000 | 13.000000 |
| 957.54877 | 1.0000000 | 0.013660013 | 5.0000000 | 31.000000 |
| 984.69377 | 1.0000000 | 0.012829534 | 5.0000000 | 14.000000 |
| 998.71502 | 1.0000000 | 0.024503752 | 4.0000000 | 16.000000 |
| 998.74377 | 1.0000000 | 0.011326364 | 5.0000000 | 40.000000 |
| 999.14366 | 1.0000000 | 6.0000000e-005 | 5.0000000 | 5.0000000 |

Information **block number 9086**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1.4892383 | 1.0000000 | 0.00098237284 | 5.0000000 | 4.0000000 |
| 1.5937740 | 1.0000000 | 0.011291542 | 7.0000000 | 22.000000 |
| 22.127142 | 1.0000000 | 0.00023645232 | 4.0000000 | 12.000000 |
| 26.952524 | 1.0000000 | 0.023460381 | 5.0000000 | 17.000000 |
| 47.970085 | 1.0000000 | 0.00024909701 | 4.0000000 | 13.000000 |
| 48.552524 | 1.0000000 | 0.023089162 | 4.0000000 | 17.000000 |
| 65.877524 | 1.0000000 | 0.019200119 | 5.0000000 | 17.000000 |
| 66.100024 | 1.0000000 | 0.013030641 | 5.0000000 | 22.000000 |
| 66.108774 | 1.0000000 | 0.019932424 | 5.0000000 | 17.000000 |
| 76.412524 | 1.0000000 | 0.019245295 | 8.0000000 | 14.000000 |
| 82.498774 | 1.0000000 | 0.015222989 | 7.0000000 | 31.000000 |
| 85.022316 | 1.0000000 | 0.0010405137 | 7.0000000 | 12.000000 |
| 95.215024 | 1.0000000 | 0.019041442 | 4.0000000 | 16.000000 |
| 108.88725 | 1.0000000 | 4.2000000e-005 | 4.0000000 | 5.0000000 |
| 114.37757 | 1.0000000 | 0.018598008 | 4.0000000 | 12.000000 |
| 114.77134 | 1.0000000 | 0.0010248277 | 5.0000000 | 4.0000000 |
| 126.71252 | 1.0000000 | 0.015627921 | 5.0000000 | 22.000000 |
| 132.14118 | 1.0000000 | 0.0001713062 | 4.0000000 | 5.0000000 |
| 146.99627 | 1.0000000 | 0.024976426 | 4.0000000 | 17.00000 |
| 165.09002 | 1.0000000 | 0.025654638 | 5.0000000 | 17.000000 |
| 188.23127 | 1.0000000 | 0.012941127 | 4.0000000 | 22.000000 |
| 206.98046 | 1.0000000 | 0.00021179984 | 5.0000000 | 4.0000000 |
| 208.05877 | 1.0000000 | 0.019504536 | 4.0000000 | 17.000000 |
| 236.17502 | 1.0000000 | 0.015587482 | 5.0000000 | 22.000000 |
| 236.78127 | 1.0000000 | 0.020530611 | 4.0000000 | 18.000000 |
| 245.74877 | 1.0000000 | 0.016297974 | 4.0000000 | 31.000000 |
| 252.55002 | 1.0000000 | 0.016260216 | 5.0000000 | 22.000000 |
| 252.88377 | 1.0000000 | 0.020191054 | 5.0000000 | 16.000000 |
| 269.84252 | 1.0000000 | 0.017367021 | 5.0000000 | 31.000000 |
| 276.50627 | 1.0000000 | 0.016200176 | 4.0000000 | 40.000000 |
| 281.28127 | 1.0000000 | 0.02853287 | 8.0000000 | 22.000000 |
| 291.39784 | 1.0000000 | 0.00020280097 | 4.0000000 | 13.000000 |
| 292.63752 | 1.0000000 | 0.028728243 | 8.0000000 | 40.000000 |
| 302.79811 | 1.0000000 | 0.00035139843 | 4.0000000 | 13.000000 |
| 303.23155 | 1.0000000 | 0.00074316036 | 5.0000000 | 5.0000000 |
| 318.63577 | 1.0000000 | 4.2000000e-005 | 5.0000000 | 5.0000000 |
| 366.59587 | 1.0000000 | 0.00024802823 | 4.0000000 | 5.0000000 |
| 369.69633 | 1.0000000 | 0.0066913898 | 8.0000000 | 5.0000000 |
| 396.96877 | 1.0000000 | 0.015156538 | 4.0000000 | 22.000000 |
| 423.28416 | 1.0000000 | 0.00080507659 | 6.0000000 | 5.0000000 |
| 440.98531 | 1.0000000 | 0.0003057773 | 5.0000000 | 5.0000000 |
| 448.54082 | 1.0000000 | 0.0011063689 | 7.0000000 | 5.0000000 |
| 454.60877 | 1.0000000 | 0.026490572 | 5.0000000 | 16.000000 |
| 465.74886 | 1.0000000 | 0.00028363929 | 4.0000000 | 5.0000000 |
| 467.43847 | 1.0000000 | 0.00057814341 | 5.0000000 | 5.0000000 |
| 472.84252 | 1.0000000 | 0.017384125 | 4.0000000 | 31.000000 |
| 501.76967 | 1.0000000 | 0.00096607125 | 6.0000000 | 4.0000000 |
| 508.37752 | 1.0000000 | 0.26498947 | 4.0000000 | 17.000000 |
| 513.38248 | 1.0000000 | 0.00041517577 | 4.0000000 | 5.0000000 |
| 515.35467 | 1.0000000 | 0.00019058171 | 4.0000000 | 13.000000 |
| 520.62283 | 1.0000000 | 0.00049437309 | 4.0000000 | 13.000000 |
| 521.61877 | 1.0000000 | 0.010764599 | 4.0000000 | 40.000000 |
| 522.60746 | 1.0000000 | 0.00075485554 | 5.0000000 | 5.0000000 |
| 541.51502 | 1.0000000 | 0.020366101 | 5.0000000 | 16.000000 |
| 547.37150 | 1.0000000 | 0.058582636 | 6.0000000 | 5.0000000 |
| 578.89252 | 1.0000000 | 0.013480938 | 5.0000000 | 31.000000 |
| 584.05877 | 1.0000000 | 0.019825902 | 6.0000000 | 16.000000 |
| 584.41252 | 1.0000000 | 0.016883442 | 7.0000000 | 14.000000 |
| 586.73964 | 1.0000000 | 0.00027326926 | 4.0000000 | 4.0000000 |
| 587.37099 | 1.0000000 | 0.1310850 | 7.0000000 | 5.0000000 |
| 589.37106 | 1.0000000 | 0.14975997 | 4.0000000 | 4.0000000 |
| 608.89920 | 1.0000000 | 0.0013001474 | 5.0000000 | 4.0000000 |
| 626.63174 | 1.0000000 | 0.00018768883 | 4.0000000 | 5.0000000 |
| 627.07752 | 1.0000000 | 0.023937949 | 4.0000000 | 17.000000 |
| 628.37122 | 1.0000000 | 0.11917777 | 4.0000000 | 5.0000000 |
| 628.97678 | 1.0000000 | 0.00021014093 | 4.0000000 | 4.0000000 |
| 636.83890 | 1.0000000 | 0.0013906102 | 7.0000000 | 13.000000 |
| 642.42502 | 1.0000000 | 0.024455661 | 4.0000000 | 18.000000 |
| 649.31380 | 1.0000000 | 0.0031480375 | 8.0000000 | 4.0000000 |
| 662.52752 | 1.0000000 | 0.024901692 | 4.0000000 | 16.000000 |

156

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|---|---|---|---|---|
| 690.42276 | 1.0000000 | 0.00029969082 | 4.0000000 | 4.0000000 |
| 705.37126 | 1.0000000 | 0.03798566 | 5.0000000 | 5.0000000 |
| 706.60502 | 1.0000000 | 0.012676217 | 4.0000000 | 31.000000 |
| 721.88127 | 1.0000000 | 0.011831664 | 4.0000000 | 40.000000 |
| 761.73752 | 1.0000000 | 0.015192692 | 4.0000000 | 14.000000 |
| 764.97127 | 1.0000000 | 0.022298964 | 4.0000000 | 16.000000 |
| 783.19002 | 1.0000000 | 0.023918756 | 6.0000000 | 16.000000 |
| 788.41587 | 1.0000000 | 0.0037721019 | 8.0000000 | 5.0000000 |
| 799.10002 | 1.0000000 | 0.011880171 | 5.0000000 | 22.000000 |
| 816.59377 | 1.0000000 | 0.011915708 | 5.0000000 | 40.000000 |
| 824.31473 | 1.0000000 | 0.0016312427 | 7.0000000 | 5.0000000 |
| 830.07622 | 1.0000000 | 0.00037259924 | 5.0000000 | 4.0000000 |
| 833.58054 | 1.0000000 | 0.0004309429 | 4.0000000 | 5.0000000 |
| 861.70252 | 1.0000000 | 0.021737689 | 4.0000000 | 17.000000 |
| 864.05002 | 1.0000000 | 0.013613176 | 7.0000000 | 40.000000 |
| 895.22218 | 1.0000000 | 0.00041941222 | 4.0000000 | 5.0000000 |
| 895.97752 | 1.0000000 | 0.030607644 | 6.0000000 | 16.000000 |
| 925.60627 | 1.0000000 | 0.020817971 | 4.0000000 | 18.000000 |
| 926.82845 | 1.0000000 | 0.00038985612 | 4.0000000 | 5.0000000 |
| 938.58356 | 1.0000000 | 0.0019359875 | 7.0000000 | 5.0000000 |
| 943.87233 | 1.0000000 | 0.00092901283 | 5.0000000 | 5.0000000 |
| 952.87884 | 1.0000000 | 0.0010106591 | 7.0000000 | 5.0000000 |
| 975.26502 | 1.0000000 | 0.022894529 | 4.0000000 | 17.000000 |
| 979.45252 | 1.0000000 | 0.020871021 | 5.0000000 | 17.000000 |
| 984.12502 | 1.0000000 | 0.013584071 | 5.0000000 | 40.000000 |

Information                           **block number 11085**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 971.25627 | 1.0000000 | 0.016598794 | 4.0000000 | 18.000000 |
| 973.32409 | 1.0000000 | 0.0013382483 | 5.0000000 | 12.000000 |
| 974.18127 | 1.0000000 | 0.022427856 | 8.0000000 | 40.000000 |
| 977.74160 | 1.0000000 | 0.00027383188 | 5.0000000 | 4.0000000 |

Information                           **block number 17386**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.75252 | 1.0000000 | 0.033379545 | 8.0000000 | 18.000000 |
| 949.97127 | 1.0000000 | 0.023070234 | 5.0000000 | 18.000000 |
| 962.30001 | 1.0000000 | 0.0012386278 | 6.0000000 | 14.000000 |
| 966.39002 | 1.0000000 | 0.022198726 | 7.0000000 | 18.000000 |
| 978.19127 | 1.0000000 | 0.0232043 | 6.0000000 | 22.000000 |
| 999.09627 | 1.0000000 | 0.0098763355 | 6.0000000 | 5.0000000 |

Information                           **block number 17880**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3312740 | 1.0000000 | 0.013676927 | 4.0000000 | 40.000000 |
| 10.212524 | 1.0000000 | 0.024799659 | 5.0000000 | 22.000000 |
| 23.337524 | 1.0000000 | 0.021324199 | 8.0000000 | 40.000000 |
| 30.530024 | 1.0000000 | 0.013154495 | 6.0000000 | 31.000000 |
| 33.371797 | 1.0000000 | 0.00033463279 | 4.0000000 | 5.0000000 |
| 39.850024 | 1.0000000 | 0.017196374 | 6.0000000 | 40.000000 |
| 50.468774 | 1.0000000 | 0.024202355 | 4.0000000 | 22.000000 |
| 51.480661 | 1.0000000 | 0.00045056411 | 5.0000000 | 12.000000 |
| 71.451047 | 1.0000000 | 0.00036761743 | 6.0000000 | 5.0000000 |
| 74.337524 | 1.0000000 | 0.011716267 | 4.0000000 | 18.000000 |
| 77.208050 | 1.0000000 | 0.00063744714 | 7.0000000 | 5.0000000 |
| 81.331274 | 1.0000000 | 0.0099999513 | 6.0000000 | 40.000000 |
| 96.092524 | 1.0000000 | 0.011099588 | 5.0000000 | 31.000000 |
| 110.71845 | 1.0000000 | 4.2000000e-005 | 7.0000000 | 5.0000000 |
| 120.53002 | 1.0000000 | 0.0089137163 | 4.0000000 | 31.000000 |
| 121.40502 | 1.0000000 | 0.0094080357 | 7.0000000 | 31.000000 |
| 122.98359 | 1.0000000 | 0.0011267759 | 5.0000000 | 12.000000 |
| 133.48627 | 1.0000000 | 0.014612694 | 8.0000000 | 31.000000 |
| 143.53627 | 1.0000000 | 0.014517462 | 4.0000000 | 31.000000 |
| 146.68127 | 1.0000000 | 0.010326488 | 4.0000000 | 40.000000 |
| 176.58502 | 1.0000000 | 0.00018166465 | 4.0000000 | 12.000000 |
| 177.63627 | 1.0000000 | 0.011579743 | 4.0000000 | 31.000000 |
| 186.66252 | 1.0000000 | 0.015226741 | 5.0000000 | 18.000000 |
| 187.22224 | 1.0000000 | 0.00056915373 | 7.0000000 | 4.000000 |
| 195.56252 | 1.0000000 | 0.012320616 | 7.0000000 | 18.000000 |

| | | | | |
|---|---|---|---|---|
| 198.48349 | 1.0000000 | 0.00037493617 | 4.0000000 | 12.000000 |
| 198.51715 | 1.0000000 | 0.00013271468 | 4.0000000 | 5.0000000 |
| 229.78002 | 1.0000000 | 0.014553167 | 5.0000000 | 31.000000 |
| 238.35502 | 1.0000000 | 0.013519669 | 7.0000000 | 31.000000 |
| 258.61877 | 1.0000000 | 0.01399088 | 7.0000000 | 18.000000 |
| 261.39377 | 1.0000000 | 0.0090488562 | 5.0000000 | 40.000000 |
| 269.09377 | 1.0000000 | 0.020275121 | 4.0000000 | 22.000000 |
| 271.26877 | 1.0000000 | 0.014541791 | 6.0000000 | 40.000000 |
| 276.68010 | 1.0000000 | 0.00046870855 | 5.0000000 | 4.0000000 |
| 294.98752 | 1.0000000 | 0.021089938 | 5.0000000 | 22.000000 |
| 314.16127 | 1.0000000 | 0.010579377 | 7.0000000 | 31.000000 |
| 314.98002 | 1.0000000 | 0.013707841 | 4.0000000 | 31.000000 |
| 319.25002 | 1.0000000 | 0.008598813 | 4.0000000 | 40.000000 |
| 321.42502 | 1.0000000 | 0.0097559929 | 5.0000000 | 40.000000 |
| 328.30627 | 1.0000000 | 0.024740664 | 7.0000000 | 22.000000 |
| 340.99378 | 1.0000000 | 0.020533973 | 4.0000000 | 22.000000 |
| 354.23752 | 1.0000000 | 0.019706798 | 4.0000000 | 22.000000 |
| 384.99377 | 1.0000000 | 0.020920261 | 4.0000000 | 22.000000 |
| 395.51877 | 1.0000000 | 0.012676787 | 7.0000000 | 40.000000 |
| 399.17427 | 1.0000000 | 0.00027638769 | 4.0000000 | 4.0000000 |
| 412.56252 | 1.0000000 | 0.011963649 | 5.0000000 | 40.000000 |
| 414.60627 | 1.0000000 | 0.0081367674 | 4.0000000 | 40.000000 |
| 425.13560 | 1.0000000 | 0.0025596495 | 6.0000000 | 13.000000 |
| 437.18127 | 1.0000000 | 0.024837878 | 5.0000000 | 22.000000 |
| 441.03127 | 1.0000000 | 0.011373062 | 4.0000000 | 40.000000 |
| 456.63752 | 1.0000000 | 0.017203092 | 6.0000000 | 40.000000 |
| 464.78002 | 1.0000000 | 0.010340173 | 5.0000000 | 31.000000 |
| 466.47115 | 1.0000000 | 0.0010971693 | 6.0000000 | 4.0000000 |
| 513.88752 | 1.0000000 | 0.0088539794 | 4.0000000 | 40.000000 |
| 536.74821 | 1.0000000 | 4.2000000e-005 | 8.0000000 | 5.0000000 |
| 537.03002 | 1.0000000 | 0.012567223 | 4.0000000 | 31.000000 |
| 557.44877 | 1.0000000 | 0.019169655 | 8.0000000 | 31.000000 |
| 573.58626 | 1.0000000 | 0.00089891837 | 4.0000000 | 12.000000 |
| 573.75486 | 1.0000000 | 0.00077943172 | 4.0000000 | 12.000000 |
| 601.96877 | 1.0000000 | 0.019956064 | 6.0000000 | 22.000000 |
| 609.28127 | 1.0000000 | 0.022857817 | 5.0000000 | 22.000000 |
| 613.24713 | 1.0000000 | 0.00083002035 | 5.0000000 | 5.0000000 |
| 616.70627 | 1.0000000 | 0.0056776683 | 8.0000000 | 5.0000000 |
| 664.03127 | 1.0000000 | 0.01454836 | 8.0000000 | 40.000000 |
| 671.86252 | 1.0000000 | 0.0087878402 | 5.0000000 | 40.000000 |
| 675.18127 | 1.0000000 | 0.017081949 | 4.0000000 | 18.000000 |
| 692.58020 | 1.0000000 | 0.0012072165 | 6.0000000 | 12.000000 |
| 700.95002 | 1.0000000 | 0.0099441086 | 5.0000000 | 40.000000 |
| 712.83002 | 1.0000000 | 0.0096281603 | 4.0000000 | 31.000000 |
| 715.39252 | 1.0000000 | 0.0087999259 | 5.0000000 | 31.000000 |
| 727.12163 | 1.0000000 | 0.004335086 | 7.0000000 | 12.000000 |
| 746.93127 | 1.0000000 | 0.023949586 | 4.0000000 | 22.000000 |
| 747.30627 | 1.0000000 | 0.020721228 | 7.0000000 | 22.000000 |
| 747.95627 | 1.0000000 | 0.013444801 | 4.0000000 | 40.000000 |
| 778.63814 | 1.0000000 | 0.00011737615 | 4.0000000 | 4.0000000 |
| 780.76127 | 1.0000000 | 0.01138595 | 4.0000000 | 31.000000 |
| 790.42502 | 1.0000000 | 0.028862081 | 5.0000000 | 22.000000 |
| 795.93628 | 1.0000000 | 0.013825774 | 5.0000000 | 31.000000 |
| 797.66565 | 1.0000000 | 0.00046606977 | 5.0000000 | 5.0000000 |
| 804.56877 | 1.0000000 | 0.020175446 | 6.0000000 | 22.000000 |
| 809.34877 | 1.0000000 | 0.0087758201 | 5.0000000 | 31.000000 |
| 813.46877 | 1.0000000 | 0.015403733 | 7.0000000 | 18.000000 |
| 819.10502 | 1.0000000 | 0.010856398 | 7.0000000 | 31.000000 |
| 820.36275 | 1.0000000 | 0.00066892489 | 5.0000000 | 4.0000000 |
| 820.42400 | 1.0000000 | 0.0017719512 | 4.0000000 | 12.000000 |
| 820.46127 | 1.0000000 | 0.012069057 | 7.0000000 | 31.00000 |
| 826.23127 | 1.0000000 | 0.014722499 | 7.0000000 | 18.000000 |
| 869.30368 | 1.0000000 | 4.2000000e-005 | 4.0000000 | 5.0000000 |
| 881.26252 | 1.0000000 | 0.0091348298 | 5.0000000 | 40.000000 |
| 887.39778 | 1.0000000 | 0.00073939382 | 5.0000000 | 5.0000000 |
| 923.43389 | 1.0000000 | 0.0076216048 | 8.0000000 | 13.000000 |
| 926.22331 | 1.0000000 | 0.00034088006 | 6.0000000 | 5.0000000 |
| 965.27377 | 1.0000000 | 0.014761841 | 4.0000000 | 31.000000 |
| 984.01641 | 1.0000000 | 0.0001921945 | 4.0000000 | 4.0000000 |
| 985.27502 | 1.0000000 | 0.022707565 | 8.0000000 | 22.000000 |

Information                              **block number 26376**

158

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.75378 | 1.0000000 | 0.034633545 | 4.0000000 | 22.000000 |
| 949.98502 | 1.0000000 | 0.036820234 | 4.0000000 | 22.000000 |
| 962.29984 | 1.0000000 | 0.0010746885 | 7.0000000 | 10.000000 |
| 966.40378 | 1.0000000 | 0.035952726 | 5.0000000 | 22.000000 |
| 978.20502 | 1.0000000 | 0.0369543 | 4.0000000 | 31.000000 |
| 999.08667 | 1.0000000 | 0.00027111761 | 4.0000000 | 7.0000000 |

Information                           **block number 38893**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.86627 | 1.0000000 | 0.020054318 | 8.0000000 | 26.000000 |
| 951.13627 | 1.0000000 | 0.011463601 | 4.0000000 | 27.000000 |

Information                           **block number 43037**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 730.66502 | 1.0000000 | 0.014713369 | 4.0000000 | 4.0000000 |
| 740.82622 | 1.0000000 | 0.00047802686 | 4.0000000 | 28.000000 |
| 758.57198 | 1.0000000 | 0.00061894024 | 5.0000000 | 29.000000 |
| 764.28502 | 1.0000000 | 0.041243963 | 4.0000000 | 40.000000 |
| 769.28502 | 1.0000000 | 0.01159624 | 5.0000000 | 5.0000000 |
| 773.82883 | 1.0000000 | 0.0010069578 | 5.0000000 | 22.000000 |
| 774.14337 | 1.0000000 | 0.00019362809 | 4.0000000 | 28.000000 |
| 797.17574 | 1.0000000 | 0.00011473178 | 4.0000000 | 22.000000 |
| 823.16897 | 1.0000000 | 0.00017429479 | 4.0000000 | 28.000000 |
| 824.17015 | 1.0000000 | 0.00038548898 | 4.0000000 | 29.000000 |
| 828.83626 | 1.0000000 | 0.00012197669 | 4.0000000 | 27.000000 |
| 829.62776 | 1.0000000 | 0.00098009246 | 7.0000000 | 28.000000 |
| 829.92498 | 1.0000000 | 0.0013306597 | 5.0000000 | 27.000000 |
| 843.52555 | 1.0000000 | 0.00089689498 | 7.0000000 | 29.000000 |
| 844.47642 | 1.0000000 | 0.0013265002 | 5.0000000 | 29.000000 |
| 860.06252 | 1.0000000 | 0.012221056 | 4.0000000 | 23.000000 |
| 869.78913 | 1.0000000 | 4.2000000e-005 | 5.0000000 | 22.000000 |
| 878.33821 | 1.0000000 | 0.0002859418 | 4.0000000 | 26.000000 |
| 879.21689 | 1.0000000 | 0.001085933 | 5.0000000 | 27.000000 |
| 911.75585 | 1.0000000 | 0.0002486081 | 4.0000000 | 25.000000 |
| 925.44127 | 1.0000000 | 0.010292461 | 4.0000000 | 5.0000000 |
| 938.75877 | 1.0000000 | 0.024261217 | 5.0000000 | 31.000000 |
| 948.18390 | 1.0000000 | 4.2000000e-005 | 4.0000000 | 22.000000 |
| 976.82919 | 1.0000000 | 0.0014682549 | 5.0000000 | 30.000000 |
| 995.51002 | 1.0000000 | 0.040051766 | 5.0000000 | 40.000000 |

Information                           **block number 58438**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 12.649282 | 1.0000000 | 0.00055111158 | 5.0000000 | 37.000000 |
| 23.606274 | 1.0000000 | 0.012877992 | 4.0000000 | 33.000000 |
| 36.631274 | 1.0000000 | 0.01360565 | 5.0000000 | 32.000000 |
| 67.676274 | 1.0000000 | 0.010199173 | 5.0000000 | 5.0000000 |
| 86.779597 | 1.0000000 | 0.0010626454 | 5.0000000 | 38.000000 |
| 90.606274 | 1.0000000 | 0.016403838 | 4.0000000 | 33.000000 |
| 114.04769 | 1.0000000 | 0.00043547023 | 4.0000000 | 35.000000 |
| 135.14730 | 1.0000000 | 0.00033812517 | 4.0000000 | 34.000000 |
| 146.91377 | 1.0000000 | 0.0092056069 | 4.0000000 | 5.0000000 |
| 155.51305 | 1.0000000 | 0.00031021443 | 4.0000000 | 39.000000 |
| 157.24471 | 1.0000000 | 0.00038616793 | 4.0000000 | 37.000000 |
| 170.26877 | 1.0000000 | 0.014521729 | 5.0000000 | 32.000000 |
| 187.33752 | 1.0000000 | 0.016575379 | 7.0000000 | 4.0000000 |
| 203.36815 | 1.0000000 | 0.00023360198 | 4.0000000 | 36.000000 |
| 204.34002 | 1.0000000 | 0.025792206 | 4.0000000 | 22.000000 |
| 207.78197 | 1.0000000 | 0.00018130315 | 4.0000000 | 35.000000 |
| 224.35817 | 1.0000000 | 0.00063367625 | 5.0000000 | 35.000000 |
| 225.79377 | 1.0000000 | 0.013058301 | 4.0000000 | 33.000000 |
| 229.93933 | 1.0000000 | 0.00086853232 | 7.0000000 | 36.000000 |
| 245.36303 | 1.0000000 | 0.00031119206 | 4.0000000 | 36.000000 |
| 262.40442 | 1.0000000 | 0.0013153777 | 6.0000000 | 37.000000 |
| 268.25720 | 1.0000000 | 0.0011753068 | 5.0000000 | 37.000000 |
| 299.12627 | 1.0000000 | 0.011391272 | 5.0000000 | 5.0000000 |
| 303.76877 | 1.0000000 | 0.012090401 | 5.0000000 | 33.000000 |
| 307.03573 | 1.0000000 | 0.00035115605 | 4.0000000 | 35.000000 |

| | | | | |
|---|---|---|---|---|
| 311.30002 | 1.0000000 | 0.014082537 | 5.0000000 | 32.000000 |
| 334.67818 | 1.0000000 | 0.00025684137 | 4.0000000 | 37.000000 |
| 356.51767 | 1.0000000 | 0.00040187676 | 4.0000000 | 37.000000 |
| 358.55002 | 1.0000000 | 0.016510959 | 7.0000000 | 32.000000 |
| 382.82990 | 1.0000000 | 0.00051023394 | 5.0000000 | 37.000000 |
| 389.25877 | 1.0000000 | 0.027492657 | 4.0000000 | 22.000000 |
| 393.61877 | 1.0000000 | 0.015673833 | 4.0000000 | 33.000000 |
| 408.40121 | 1.0000000 | 0.0018331125 | 7.0000000 | 34.000000 |
| 427.99031 | 1.0000000 | 0.00068328423 | 5.0000000 | 31.000000 |
| 439.68139 | 1.0000000 | 0.00044383732 | 4.0000000 | 39.000000 |
| 451.60627 | 1.0000000 | 0.011811258 | 5.0000000 | 4.000000 |
| 451.77387 | 1.0000000 | 0.0012555636 | 6.0000000 | 31.000000 |
| 455.17324 | 1.0000000 | 0.00081184954 | 5.0000000 | 31.000000 |
| 455.55752 | 1.0000000 | 0.022823245 | 4.0000000 | 18.000000 |
| 462.18376 | 1.0000000 | 0.00021134979 | 4.0000000 | 31.000000 |
| 464.75975 | 1.0000000 | 0.0003538776 | 4.0000000 | 34.000000 |
| 477.41372 | 1.0000000 | 0.00023567088 | 4.0000000 | 36.000000 |
| 503.72705 | 1.0000000 | 4.2000000e-005 | 8.0000000 | 31.000000 |
| 503.77928 | 1.0000000 | 0.0002614175 | 4.0000000 | 36.000000 |
| 511.63403 | 1.0000000 | 0.0023779242 | 7.0000000 | 31.000000 |
| 526.72620 | 1.0000000 | 0.000301239 | 4.0000000 | 37.000000 |
| 531.06502 | 1.0000000 | 0.027452378 | 5.0000000 | 22.000000 |
| 540.73752 | 1.0000000 | 0.013381537 | 4.0000000 | 32.000000 |
| 564.02252 | 1.0000000 | 6.2599613e-005 | 4.0000000 | 37.000000 |
| 565.95002 | 1.0000000 | 0.012006106 | 5.0000000 | 33.000000 |
| 566.80555 | 1.0000000 | 0.00028278777 | 4.0000000 | 37.000000 |
| 576.78877 | 1.0000000 | 0.010672797 | 4.0000000 | 5.0000000 |
| 596.22127 | 1.0000000 | 0.024557181 | 5.0000000 | 22.000000 |
| 609.88496 | 1.0000000 | 0.00092995494 | 5.0000000 | 39.000000 |
| 613.54860 | 1.0000000 | 0.00032001278 | 4.0000000 | 35.000000 |
| 616.76096 | 1.0000000 | 0.00012125211 | 4.0000000 | 37.000000 |
| 626.90296 | 1.0000000 | 0.00017535286 | 4.0000000 | 35.000000 |
| 638.31725 | 1.0000000 | 0.00040569025 | 4.0000000 | 35.000000 |
| 645.44377 | 1.0000000 | 0.016391153 | 7.0000000 | 33.000000 |
| 709.60504 | 1.0000000 | 0.0080732587 | 8.0000000 | 35.000000 |
| 715.33938 | 1.0000000 | 0.00075444546 | 5.0000000 | 35.000000 |
| 718.01252 | 1.0000000 | 0.01418875 | 4.0000000 | 32.000000 |
| 729.70002 | 1.0000000 | 0.015063429 | 4.0000000 | 32.000000 |
| 745.87502 | 1.0000000 | 0.011366928 | 4.0000000 | 33.000000 |
| 750.65120 | 1.0000000 | 0.0014874111 | 6.0000000 | 37.000000 |
| 761.24002 | 1.0000000 | 0.023807711 | 6.0000000 | 22.000000 |
| 763.45165 | 1.0000000 | 0.00072471572 | 5.0000000 | 37.000000 |
| 769.07772 | 1.0000000 | 0.0002568019 | 4.0000000 | 35.000000 |
| 777.16790 | 1.0000000 | 0.00088435924 | 5.0000000 | 35.000000 |
| 781.08164 | 1.0000000 | 0.0013958127 | 5.0000000 | 39.000000 |
| 784.74776 | 1.0000000 | 0.0002442788 | 4.0000000 | 36.000000 |
| 816.71252 | 1.0000000 | 0.016663501 | 4.0000000 | 32.000000 |
| 822.23403 | 1.0000000 | 0.00027939958 | 4.0000000 | 34.000000 |
| 836.53877 | 1.0000000 | 0.023528528 | 4.0000000 | 18.000000 |
| 840.46252 | 1.0000000 | 0.013368031 | 5.0000000 | 4.0000000 |
| 851.85387 | 1.0000000 | 0.00040656854 | 5.0000000 | 31.000000 |
| 856.24715 | 1.0000000 | 0.00019104425 | 4.0000000 | 39.000000 |
| 865.73127 | 1.0000000 | 0.0083387247 | 4.0000000 | 4.0000000 |
| 877.69002 | 1.0000000 | 0.028044721 | 5.0000000 | 22.000000 |
| 878.13619 | 1.0000000 | 0.00047969368 | 5.0000000 | 37.000000 |
| 886.78341 | 1.0000000 | 0.00070100053 | 5.0000000 | 39.000000 |
| 912.10308 | 1.0000000 | 0.00076502452 | 6.0000000 | 39.000000 |
| 936.82990 | 1.0000000 | 0.00025217744 | 5.0000000 | 37.000000 |
| 940.26377 | 1.0000000 | 0.025561698 | 6.0000000 | 18.000000 |
| 955.96252 | 1.0000000 | 0.011163882 | 4.0000000 | 4.0000000 |
| 991.96704 | 1.0000000 | 0.00072356187 | 5.0000000 | 35.000000 |

Information      **block number 69342**
 Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3387740 | 1.0000000 | 0.021176927 | 4.0000000 | 47.000000 |
| 10.196274 | 1.0000000 | 0.0085496588 | 4.0000000 | 43.000000 |
| 23.333774 | 1.0000000 | 0.017574199 | 7.0000000 | 48.000000 |
| 30.530024 | 1.0000000 | 0.013154495 | 4.0000000 | 45.000000 |
| 33.387524 | 1.0000000 | 0.016061595 | 4.0000000 | 40.000000 |

| | | | | |
|---|---|---|---|---|
| 39.857524 | 1.0000000 | 0.024696374 | 7.0000000 | 47.000000 |
| 50.453774 | 1.0000000 | 0.0092023554 | 5.0000000 | 44.000000 |
| 51.480973 | 1.0000000 | 0.0007631805 | 5.0000000 | 41.000000 |
| 71.462524 | 1.0000000 | 0.011844714 | 6.0000000 | 40.000000 |
| 74.348774 | 1.0000000 | 0.022966267 | 7.0000000 | 42.000000 |
| 77.218774 | 1.0000000 | 0.011361035 | 4.0000000 | 40.000000 |
| 81.345024 | 1.0000000 | 0.023749951 | 4.0000000 | 47.000000 |
| 96.093774 | 1.0000000 | 0.012349588 | 4.0000000 | 46.000000 |
| 110.73127 | 1.0000000 | 0.012870011 | 4.0000000 | 40.000000 |
| 120.53752 | 1.0000000 | 0.016413716 | 4.0000000 | 46.000000 |
| 121.41252 | 1.0000000 | 0.016908036 | 7.0000000 | 46.000000 |
| 122.98296 | 1.0000000 | 0.00050134336 | 4.0000000 | 41.000000 |
| 133.48627 | 1.0000000 | 0.014612694 | 6.0000000 | 45.000000 |
| 143.53752 | 1.0000000 | 0.015767462 | 4.0000000 | 46.000000 |
| 146.69502 | 1.0000000 | 0.024076488 | 4.0000000 | 47.000000 |
| 176.58743 | 1.0000000 | 0.0025971383 | 8.0000000 | 41.000000 |
| 177.63752 | 1.0000000 | 0.012829743 | 4.0000000 | 46.000000 |
| 186.67377 | 1.0000000 | 0.026476741 | 4.0000000 | 42.000000 |
| 187.23752 | 1.0000000 | 0.015852036 | 4.0000000 | 40.000000 |
| 195.57377 | 1.0000000 | 0.023570616 | 4.0000000 | 42.000000 |
| 198.48351 | 1.0000000 | 0.00039212266 | 4.0000000 | 41.000000 |
| 198.53127 | 1.0000000 | 0.014259884 | 5.0000000 | 40.000000 |
| 229.78127 | 1.0000000 | 0.015803167 | 5.0000000 | 46.000000 |
| 238.35627 | 1.0000000 | 0.014769669 | 4.0000000 | 46.000000 |
| 258.63002 | 1.0000000 | 0.02524088 | 4.0000000 | 42.000000 |
| 261.39627 | 1.0000000 | 0.011548856 | 4.0000000 | 48.000000 |
| 269.08502 | 1.0000000 | 0.011525121 | 4.0000000 | 44.000000 |
| 271.26502 | 1.0000000 | 0.010791791 | 5.0000000 | 48.000000 |
| 276.69377 | 1.0000000 | 0.014140968 | 7.0000000 | 40.000000 |
| 294.97752 | 1.0000000 | 0.011089938 | 5.0000000 | 43.000000 |
| 314.16252 | 1.0000000 | 0.011829377 | 7.0000000 | 46.000000 |
| 314.98627 | 1.0000000 | 0.019957841 | 8.0000000 | 45.000000 |
| 319.26377 | 1.0000000 | 0.022348813 | 4.0000000 | 47.000000 |
| 321.43877 | 1.0000000 | 0.023505993 | 5.0000000 | 47.000000 |
| 328.29127 | 1.0000000 | 0.0097406645 | 5.0000000 | 44.000000 |
| 340.99127 | 1.0000000 | 0.018029973 | 4.0000000 | 44.000000 |
| 354.23502 | 1.0000000 | 0.017206798 | 8.0000000 | 44.000000 |
| 384.98502 | 1.0000000 | 0.012170261 | 5.0000000 | 44.000000 |
| 395.52627 | 1.0000000 | 0.020176787 | 7.0000000 | 47.000000 |
| 399.18752 | 1.0000000 | 0.013534933 | 7.0000000 | 40.000000 |
| 412.55877 | 1.0000000 | 0.0082136495 | 4.0000000 | 48.000000 |
| 414.61502 | 1.0000000 | 0.016886767 | 5.0000000 | 48.000000 |
| 425.16752 | 1.0000000 | 0.034484566 | 5.0000000 | 42.000000 |
| 437.16627 | 1.0000000 | 0.0098378783 | 7.0000000 | 44.000000 |
| 441.02752 | 1.0000000 | 0.0076230619 | 6.0000000 | 48.000000 |
| 456.64002 | 1.0000000 | 0.019703092 | 5.0000000 | 48.000000 |
| 464.78127 | 1.0000000 | 0.011590173 | 5.0000000 | 46.000000 |
| 466.48752 | 1.0000000 | 0.017473107 | 8.0000000 | 40.000000 |
| 513.90127 | 1.0000000 | 0.022603979 | 7.0000000 | 47.000000 |
| 536.76252 | 1.0000000 | 0.014357882 | 4.0000000 | 40.000000 |
| 537.03002 | 1.0000000 | 0.012567223 | 4.0000000 | 45.000000 |
| 557.46127 | 1.0000000 | 0.031669655 | 8.0000000 | 45.000000 |
| 573.59300 | 1.0000000 | 0.0076386522 | 8.0000000 | 41.000000 |
| 573.75445 | 1.0000000 | 0.00036652716 | 4.0000000 | 41.000000 |
| 601.97127 | 1.0000000 | 0.022456064 | 8.0000000 | 43.000000 |
| 609.27252 | 1.0000000 | 0.014107817 | 4.0000000 | 44.000000 |
| 613.26252 | 1.0000000 | 0.016224461 | 4.0000000 | 40.000000 |
| 616.71252 | 1.0000000 | 0.011932545 | 6.0000000 | 40.000000 |
| 671.86502 | 1.0000000 | 0.01128784 | 4.0000000 | 48.000000 |
| 675.19252 | 1.0000000 | 0.028331949 | 5.0000000 | 42.000000 |
| 692.57959 | 1.0000000 | 0.00058912371 | 4.0000000 | 41.000000 |
| 700.96377 | 1.0000000 | 0.023694109 | 4.0000000 | 47.000000 |
| 712.84252 | 1.0000000 | 0.02212816 | 6.0000000 | 45.000000 |
| 715.40002 | 1.0000000 | 0.016299926 | 7.0000000 | 46.000000 |
| 727.11791 | 1.0000000 | 0.0006215403 | 5.0000000 | 41.000000 |
| 746.91627 | 1.0000000 | 0.008949586 | 5.0000000 | 44.000000 |
| 747.29627 | 1.0000000 | 0.010721228 | 7.0000000 | 43.000000 |
| 747.96377 | 1.0000000 | 0.020944801 | 4.0000000 | 47.000000 |
| 778.65002 | 1.0000000 | 0.012003732 | 4.0000000 | 40.000000 |
| 780.77377 | 1.0000000 | 0.02388595 | 4.0000000 | 45.000000 |
| 790.41502 | 1.0000000 | 0.018862081 | 5.0000000 | 43.000000 |
| 795.93752 | 1.0000000 | 0.015071774 | 6.0000000 | 46.000000 |

161

| | | | | |
|---|---|---|---|---|
| 797.68127 | 1.0000000 | 0.016088777 | 8.0000000 | 40.000000 |
| 804.56627 | 1.0000000 | 0.017675446 | 4.0000000 | 44.000000 |
| 809.35502 | 1.0000000 | 0.01502582 | 7.0000000 | 45.000000 |
| 813.48627 | 1.0000000 | 0.032903733 | 5.0000000 | 42.000000 |
| 819.10502 | 1.0000000 | 0.010856398 | 5.0000000 | 45.000000 |
| 820.37502 | 1.0000000 | 0.012945593 | 6.0000000 | 40.000000 |
| 820.42348 | 1.0000000 | 0.0012567911 | 6.0000000 | 41.000000 |
| 820.46252 | 1.0000000 | 0.013319057 | 4.0000000 | 46.000000 |
| 826.24877 | 1.0000000 | 0.032222499 | 4.0000000 | 42.000000 |
| 869.33127 | 1.0000000 | 0.027636548 | 8.0000000 | 40.000000 |
| 881.27752 | 1.0000000 | 0.02413483 | 4.0000000 | 48.000000 |
| 887.41252 | 1.0000000 | 0.015483975 | 7.0000000 | 40.000000 |
| 923.46752 | 1.0000000 | 0.041252449 | 4.0000000 | 42.000000 |
| 926.23752 | 1.0000000 | 0.01455227 | 5.0000000 | 40.000000 |
| 965.27377 | 1.0000000 | 0.014761841 | 4.0000000 | 45.000000 |
| 984.03127 | 1.0000000 | 0.015052237 | 4.0000000 | 40.000000 |
| 985.26627 | 1.0000000 | 0.013957565 | 8.0000000 | 44.000000 |

Information  **block number 77152**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 9.1401588 | 1.0000000 | 0.00046579408 | 7.0000000 | 44.000000 |
| 13.471352 | 1.0000000 | 0.0016747214 | 7.0000000 | 48.000000 |
| 29.193620 | 1.0000000 | 0.00014844459 | 4.0000000 | 46.000000 |
| 30.447524 | 1.0000000 | 0.015670494 | 6.0000000 | 5.0000000 |
| 33.520024 | 1.0000000 | 0.0099044399 | 5.0000000 | 41.000000 |
| 34.605024 | 1.0000000 | 0.024060722 | 5.0000000 | 18.000000 |
| 58.709581 | 1.0000000 | 0.00018145615 | 4.0000000 | 48.000000 |
| 92.809300 | 1.0000000 | 0.0010204757 | 5.0000000 | 44.000000 |
| 96.807524 | 1.0000000 | 0.0094669033 | 4.0000000 | 41.000000 |
| 104.74223 | 1.0000000 | 0.00028221127 | 4.0000000 | 46.000000 |
| 105.68124 | 1.0000000 | 0.00025785275 | 6.0000000 | 47.000000 |
| 127.52377 | 1.0000000 | 0.024644058 | 4.0000000 | 18.000000 |
| 131.14468 | 1.0000000 | 0.00073562136 | 5.0000000 | 43.000000 |
| 138.61854 | 1.0000000 | 0.001233384 | 7.0000000 | 47.000000 |
| 152.53252 | 1.0000000 | 0.011194378 | 4.0000000 | 41.000000 |
| 174.39502 | 1.0000000 | 0.0084118894 | 4.0000000 | 41.000000 |
| 177.25895 | 1.0000000 | 0.00037474349 | 4.0000000 | 43.000000 |
| 182.89882 | 1.0000000 | 0.00015196585 | 5.0000000 | 44.000000 |
| 188.93472 | 1.0000000 | 0.0026050644 | 8.0000000 | 46.000000 |
| 189.43002 | 1.0000000 | 0.025790779 | 5.0000000 | 18.000000 |
| 191.74853 | 1.0000000 | 0.00086478699 | 5.0000000 | 46.000000 |
| 192.65193 | 1.0000000 | 0.0037936204 | 8.0000000 | 46.000000 |
| 198.20127 | 1.0000000 | 0.02077275 | 4.0000000 | 31.000000 |
| 207.54463 | 1.0000000 | 0.0017629035 | 6.0000000 | 46.000000 |
| 214.32452 | 1.0000000 | 0.00071037192 | 7.0000000 | 44.000000 |
| 219.08752 | 1.0000000 | 0.016012195 | 4.0000000 | 42.000000 |
| 220.85299 | 1.0000000 | 0.00020528823 | 4.0000000 | 44.000000 |
| 222.20539 | 1.0000000 | 0.00047829614 | 4.0000000 | 40.000000 |
| 230.63358 | 1.0000000 | 0.00038816835 | 4.0000000 | 43.000000 |
| 243.93002 | 1.0000000 | 0.028310281 | 5.0000000 | 18.000000 |
| 246.95127 | 1.0000000 | 0.0099152487 | 4.0000000 | 41.000000 |
| 253.23500 | 1.0000000 | 0.00084635288 | 5.0000000 | 46.000000 |
| 255.30014 | 1.0000000 | 0.0026950847 | 8.0000000 | 40.000000 |
| 263.98502 | 1.0000000 | 0.014714476 | 6.0000000 | 5.0000000 |
| 289.04486 | 1.0000000 | 0.00093772236 | 7.0000000 | 45.000000 |
| 289.30982 | 1.0000000 | 0.0011784249 | 5.0000000 | 46.000000 |
| 295.56877 | 1.0000000 | 0.013254334 | 4.0000000 | 42.000000 |
| 309.56127 | 1.0000000 | 0.026525851 | 5.0000000 | 18.000000 |
| 309.90583 | 1.0000000 | 0.00062335461 | 4.0000000 | 43.000000 |
| 311.09377 | 1.0000000 | 0.013359889 | 4.0000000 | 42.000000 |
| 322.74608 | 1.0000000 | 0.00040836536 | 4.0000000 | 40.000000 |
| 324.61476 | 1.0000000 | 0.00029494036 | 4.0000000 | 48.000000 |
| 337.36252 | 1.0000000 | 0.016051561 | 4.0000000 | 42.000000 |
| 343.96299 | 1.0000000 | 0.0002308738 | 4.0000000 | 45.000000 |
| 362.88252 | 1.0000000 | 0.008867086 | 4.0000000 | 41.000000 |
| 377.88871 | 1.0000000 | 0.00045214143 | 4.0000000 | 44.000000 |
| 380.80127 | 1.0000000 | 0.024232532 | 5.0000000 | 31.000000 |
| 389.26367 | 1.0000000 | 0.00075909781 | 5.0000000 | 40.000000 |
| 425.40577 | 1.0000000 | 0.0015508728 | 7.0000000 | 44.000000 |
| 441.62002 | 1.0000000 | 0.011784119 | 4.0000000 | 41.000000 |
| 450.63718 | 1.0000000 | 0.0004587307 | 4.0000000 | 46.000000 |

162

| | | | | |
|---|---|---|---|---|
| 476.24877 | 1.0000000 | 0.027653504 | 4.0000000 | 18.000000 |
| 494.38409 | 1.0000000 | 0.00037167548 | 5.0000000 | 43.000000 |
| 512.21395 | 1.0000000 | 0.00078538202 | 5.0000000 | 43.000000 |
| 547.54528 | 1.0000000 | 0.00042992591 | 4.0000000 | 45.000000 |
| 565.93254 | 1.0000000 | 0.00037184767 | 4.0000000 | 45.000000 |
| 569.41252 | 1.0000000 | 0.010815743 | 4.0000000 | 42.000000 |
| 578.57502 | 1.0000000 | 0.015065601 | 4.0000000 | 42.000000 |
| 579.57002 | 1.0000000 | 0.025846011 | 6.0000000 | 31.000000 |
| 589.60127 | 1.0000000 | 0.017600802 | 5.0000000 | 41.000000 |
| 592.00503 | 1.0000000 | 0.0063037008 | 8.0000000 | 47.000000 |
| 601.03925 | 1.0000000 | 0.00030379401 | 4.0000000 | 47.000000 |
| 609.56002 | 1.0000000 | 0.011751512 | 5.0000000 | 5.0000000 |
| 615.65922 | 1.0000000 | 0.00058408898 | 4.0000000 | 43.000000 |
| 620.17412 | 1.0000000 | 0.00032158115 | 4.0000000 | 46.000000 |
| 647.74252 | 1.0000000 | 0.025385638 | 5.0000000 | 18.000000 |
| 654.76407 | 1.0000000 | 4.2000000e-005 | 5.0000000 | 40.000000 |
| 658.47127 | 1.0000000 | 0.011449915 | 4.0000000 | 4.0000000 |
| 667.30627 | 1.0000000 | 0.03657145 | 5.0000000 | 22.000000 |
| 671.51763 | 1.0000000 | 0.00047142009 | 4.0000000 | 44.000000 |
| 678.70752 | 1.0000000 | 0.024491504 | 4.0000000 | 31.000000 |
| 679.53857 | 1.0000000 | 0.00058813056 | 5.0000000 | 47.000000 |
| 711.37441 | 1.0000000 | 0.00018367555 | 4.0000000 | 46.000000 |
| 715.28265 | 1.0000000 | 0.00093955147 | 5.0000000 | 47.000000 |
| 717.69429 | 1.0000000 | 0.0023415671 | 8.0000000 | 46.000000 |
| 749.35127 | 1.0000000 | 0.027422589 | 8.0000000 | 31.000000 |
| 778.26922 | 1.0000000 | 0.00089815419 | 5.0000000 | 44.000000 |
| 789.61877 | 1.0000000 | 0.035668553 | 7.0000000 | 22.000000 |
| 802.68252 | 1.0000000 | 0.021177778 | 5.0000000 | 31.000000 |
| 809.08751 | 1.0000000 | 0.00041678418 | 4.0000000 | 46.000000 |
| 812.96565 | 1.0000000 | 0.0065178743 | 8.0000000 | 46.000000 |
| 832.49830 | 1.0000000 | 0.00055588962 | 8.0000000 | 46.000000 |
| 839.61711 | 1.0000000 | 0.00032235129 | 4.0000000 | 48.000000 |
| 842.65865 | 1.0000000 | 0.0002061425 | 4.0000000 | 43.000000 |
| 851.67694 | 1.0000000 | 6.0000000e-005 | 5.0000000 | 48.000000 |
| 852.31752 | 1.0000000 | 0.027885627 | 4.0000000 | 18.000000 |
| 854.28252 | 1.0000000 | 0.023749061 | 4.0000000 | 31.000000 |
| 857.34070 | 1.0000000 | 0.000469373 | 5.0000000 | 43.000000 |
| 872.59958 | 1.0000000 | 0.0012932995 | 7.0000000 | 43.000000 |
| 893.78128 | 1.0000000 | 0.00079775721 | 5.0000000 | 40.000000 |
| 915.59732 | 1.0000000 | 6.6262991e-005 | 4.0000000 | 47.000000 |
| 926.41877 | 1.0000000 | 0.015186252 | 7.0000000 | 42.000000 |
| 949.83752 | 1.0000000 | 0.016545172 | 8.0000000 | 42.000000 |
| 949.86102 | 1.0000000 | 0.00032457804 | 4.0000000 | 40.000000 |
| 977.58067 | 1.0000000 | 0.0026429956 | 8.0000000 | 43.000000 |

Information                    **block number 83021**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3191067 | 1.0000000 | 0.0015095823 | 6.0000000 | 17.000000 |
| 10.398774 | 1.0000000 | 0.21104966 | 8.0000000 | 5.0000000 |
| 23.317885 | 1.0000000 | 0.0016848005 | 4.0000000 | 17.000000 |
| 30.517990 | 1.0000000 | 0.0011208653 | 4.0000000 | 16.000000 |
| 33.398778 | 1.0000000 | 0.027315595 | 4.0000000 | 4.0000000 |
| 39.833751 | 1.0000000 | 0.000923802 | 4.0000000 | 17.000000 |
| 50.461278 | 1.0000000 | 0.016706355 | 4.0000000 | 5.0000000 |
| 51.505028 | 1.0000000 | 0.024817794 | 7.0000000 | 4.0000000 |
| 71.480028 | 1.0000000 | 0.029348714 | 5.0000000 | 4.0000000 |
| 74.342528 | 1.0000000 | 0.016720267 | 5.0000000 | 5.0000000 |
| 77.392528 | 1.0000000 | 0.18511504 | 6.0000000 | 4.0000000 |
| 81.322014 | 1.0000000 | 0.00074014172 | 4.0000000 | 17.000000 |
| 96.082011 | 1.0000000 | 0.00058668771 | 5.0000000 | 16.000000 |
| 110.74253 | 1.0000000 | 0.024124011 | 4.0000000 | 4.0000000 |
| 120.52386 | 1.0000000 | 0.0027469766 | 5.0000000 | 16.000000 |
| 121.39742 | 1.0000000 | 0.0018024845 | 4.0000000 | 16.000000 |
| 123.01128 | 1.0000000 | 0.02881558 | 5.0000000 | 4.0000000 |
| 133.47268 | 1.0000000 | 0.0010200902 | 5.0000000 | 16.000000 |
| 143.52286 | 1.0000000 | 0.0011051389 | 7.0000000 | 16.000000 |
| 146.67221 | 1.0000000 | 0.0012641775 | 4.0000000 | 17.000000 |
| 176.61128 | 1.0000000 | 0.026441603 | 5.0000000 | 4.0000000 |
| 177.62612 | 1.0000000 | 0.0014236492 | 4.0000000 | 16.000000 |
| 186.68002 | 1.0000000 | 0.032726741 | 8.0000000 | 5.0000000 |
| 187.24878 | 1.0000000 | 0.027106036 | 6.0000000 | 4.0000000 |

| | | | | |
|---|---|---|---|---|
| 195.57377 | 1.0000000 | 0.023570616 | 6.0000000 | 5.0000000 |
| 198.52377 | 1.0000000 | 0.040657413 | 8.0000000 | 4.0000000 |
| 198.54253 | 1.0000000 | 0.025513884 | 4.0000000 | 4.0000000 |
| 229.76657 | 1.0000000 | 0.0011019462 | 5.0000000 | 16.000000 |
| 238.34276 | 1.0000000 | 0.0012598557 | 5.0000000 | 16.000000 |
| 258.62377 | 1.0000000 | 0.01899088 | 5.0000000 | 5.0000000 |
| 261.38539 | 1.0000000 | 0.00066839592 | 7.0000000 | 17.000000 |
| 269.08627 | 1.0000000 | 0.012775121 | 4.0000000 | 5.0000000 |
| 271.38035 | 1.0000000 | 0.12611851 | 4.0000000 | 17.000000 |
| 276.70502 | 1.0000000 | 0.025390968 | 7.0000000 | 4.0000000 |
| 294.98627 | 1.0000000 | 0.019839938 | 7.0000000 | 5.0000000 |
| 314.15346 | 1.0000000 | 0.0027661798 | 5.0000000 | 16.000000 |
| 314.96745 | 1.0000000 | 0.0011366253 | 5.0000000 | 16.000000 |
| 319.24225 | 1.0000000 | 0.00082388358 | 4.0000000 | 17.000000 |
| 321.41576 | 1.0000000 | 0.00049213714 | 4.0000000 | 17.000000 |
| 328.29877 | 1.0000000 | 0.017240664 | 4.0000000 | 5.0000000 |
| 340.99252 | 1.0000000 | 0.019279973 | 8.0000000 | 5.0000000 |
| 354.23002 | 1.0000000 | 0.012206798 | 4.0000000 | 5.0000000 |
| 384.99877 | 1.0000000 | 0.025920261 | 8.0000000 | 5.0000000 |
| 395.50816 | 1.0000000 | 0.002061838 | 5.0000000 | 17.000000 |
| 399.19878 | 1.0000000 | 0.024788933 | 4.0000000 | 4.0000000 |
| 412.55136 | 1.0000000 | 0.0007993266 | 5.0000000 | 17.000000 |
| 414.59939 | 1.0000000 | 0.0012565308 | 7.0000000 | 17.000000 |
| 425.14878 | 1.0000000 | 0.015738566 | 4.0000000 | 5.0000000 |
| 437.18002 | 1.0000000 | 0.023587878 | 8.0000000 | 5.0000000 |
| 441.02065 | 1.0000000 | 0.00074801782 | 4.0000000 | 17.000000 |
| 456.62182 | 1.0000000 | 0.0014990766 | 4.0000000 | 17.000000 |
| 464.77178 | 1.0000000 | 0.0020973353 | 5.0000000 | 16.000000 |
| 466.49878 | 1.0000000 | 0.028727107 | 5.0000000 | 4.0000000 |
| 513.88611 | 1.0000000 | 0.0074424707 | 5.0000000 | 17.000000 |
| 536.77378 | 1.0000000 | 0.025611882 | 4.0000000 | 4.0000000 |
| 537.01863 | 1.0000000 | 0.0011759923 | 4.0000000 | 16.000000 |
| 557.43083 | 1.0000000 | 0.00122488 | 4.0000000 | 16.000000 |
| 573.61128 | 1.0000000 | 0.025913115 | 5.0000000 | 4.0000000 |
| 573.78003 | 1.0000000 | 0.025942674 | 4.0000000 | 4.0000000 |
| 601.96127 | 1.0000000 | 0.012456064 | 6.0000000 | 5.0000000 |
| 609.27378 | 1.0000000 | 0.015361817 | 4.0000000 | 5.0000000 |
| 613.38628 | 1.0000000 | 0.13997846 | 4.0000000 | 4.0000000 |
| 616.73003 | 1.0000000 | 0.029436545 | 7.0000000 | 4.0000000 |
| 664.02354 | 1.0000000 | 0.0068159823 | 8.0000000 | 17.000000 |
| 671.85433 | 1.0000000 | 0.00058921993 | 4.0000000 | 17.000000 |
| 675.18003 | 1.0000000 | 0.015835949 | 4.0000000 | 5.0000000 |
| 692.60503 | 1.0000000 | 0.026030815 | 4.0000000 | 4.0000000 |
| 700.94148 | 1.0000000 | 0.0014012686 | 6.0000000 | 17.000000 |
| 712.82307 | 1.0000000 | 0.0026723333 | 5.0000000 | 16.000000 |
| 715.38475 | 1.0000000 | 0.0010283597 | 5.0000000 | 16.000000 |
| 727.39252 | 1.0000000 | 0.27523068 | 8.0000000 | 4.0000000 |
| 746.93002 | 1.0000000 | 0.022699586 | 5.0000000 | 5.0000000 |
| 747.29878 | 1.0000000 | 0.013225228 | 4.0000000 | 5.0000000 |
| 747.94401 | 1.0000000 | 0.0011804985 | 5.0000000 | 17.000000 |
| 778.66753 | 1.0000000 | 0.029507732 | 4.0000000 | 4.0000000 |
| 780.75099 | 1.0000000 | 0.001099252 | 4.0000000 | 16.000000 |
| 790.41128 | 1.0000000 | 0.015116081 | 5.0000000 | 5.0000000 |
| 795.92350 | 1.0000000 | 0.0010441569 | 6.0000000 | 16.000000 |
| 797.69253 | 1.0000000 | 0.027342777 | 4.0000000 | 4.0000000 |
| 804.56753 | 1.0000000 | 0.018929446 | 4.0000000 | 5.0000000 |
| 809.34193 | 1.0000000 | 0.0019364654 | 5.0000000 | 16.000000 |
| 813.46753 | 1.0000000 | 0.014157733 | 4.0000000 | 5.0000000 |
| 819.09463 | 1.0000000 | 0.00046142413 | 4.0000000 | 16.000000 |
| 820.38628 | 1.0000000 | 0.024199593 | 4.0000000 | 4.0000000 |
| 820.44878 | 1.0000000 | 0.026554216 | 4.0000000 | 4.0000000 |
| 820.45128 | 1.0000000 | 0.0020735144 | 7.0000000 | 16.000000 |
| 826.23003 | 1.0000000 | 0.013476499 | 4.0000000 | 5.0000000 |
| 869.33003 | 1.0000000 | 0.026390548 | 5.0000000 | 4.0000000 |
| 881.25410 | 1.0000000 | 0.0007136487 | 4.0000000 | 17.000000 |
| 887.42378 | 1.0000000 | 0.026737975 | 4.0000000 | 4.0000000 |
| 923.44878 | 1.0000000 | 0.022506449 | 4.0000000 | 5.0000000 |
| 926.24878 | 1.0000000 | 0.02580627 | 5.0000000 | 4.0000000 |
| 965.26144 | 1.0000000 | 0.0024276304 | 7.0000000 | 16.000000 |
| 984.04253 | 1.0000000 | 0.026306237 | 7.0000000 | 4.0000000 |
| 985.26752 | 1.0000000 | 0.015207565 | 4.0000000 | 5.0000000 |

Run 1 AP1



Run 1 AP 4

165
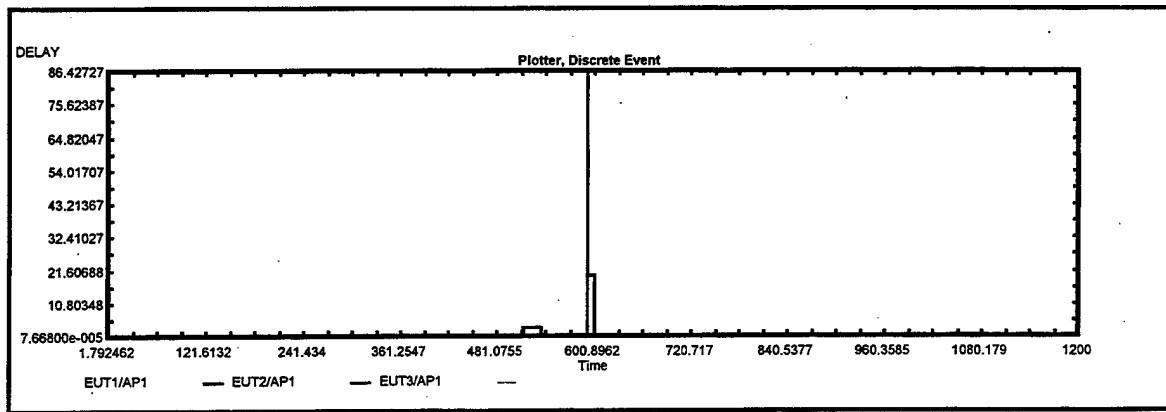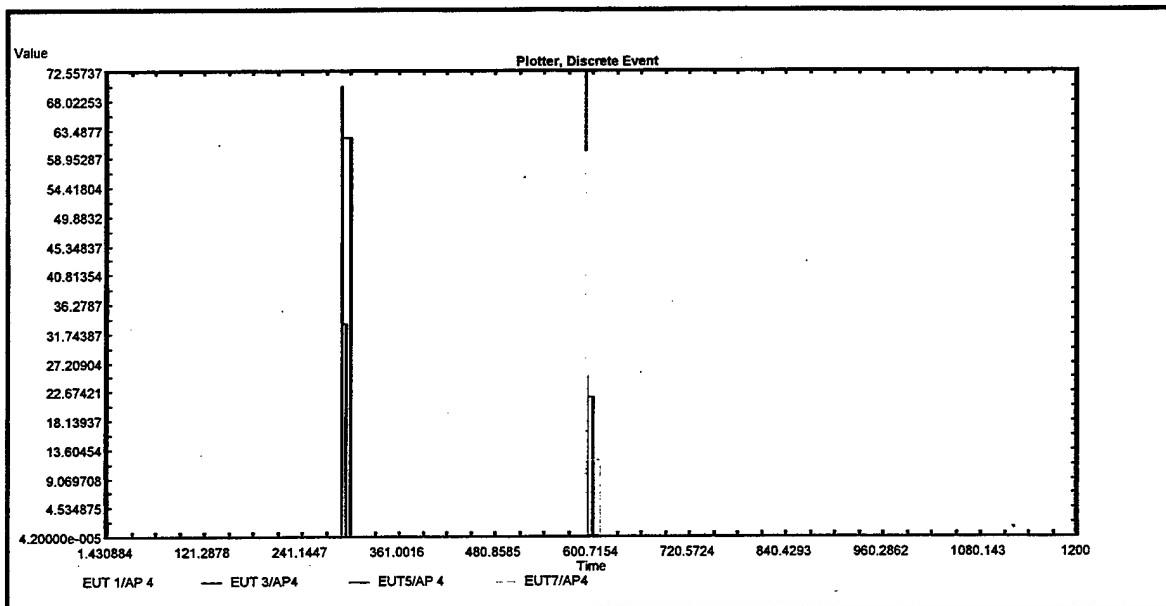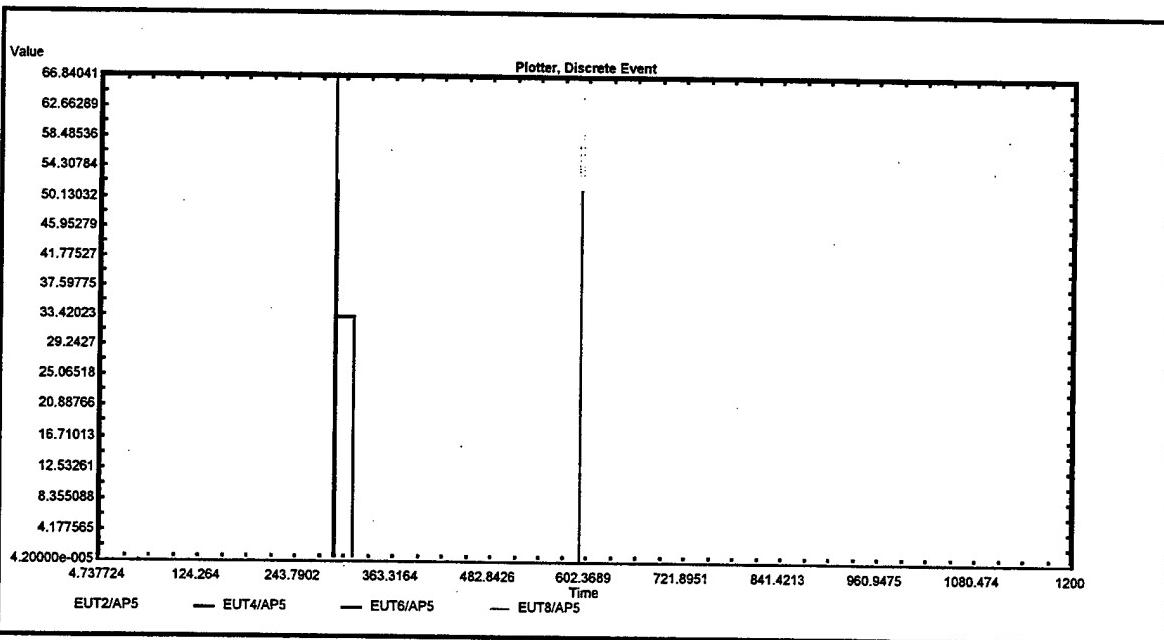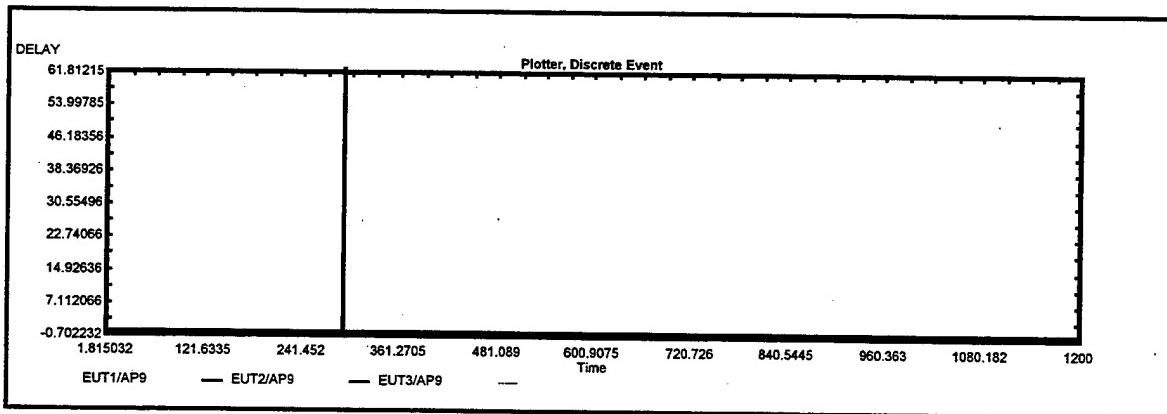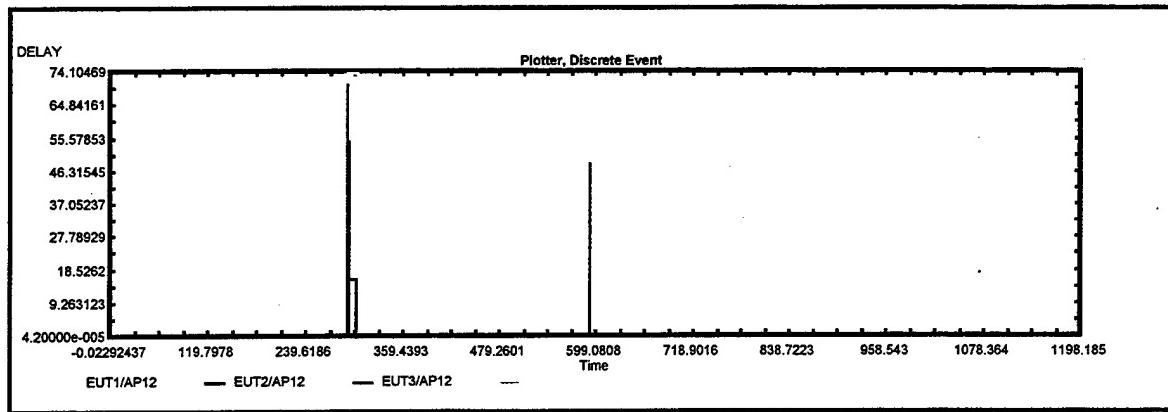
Run 1 AP 5



Run 1 AP 9

Run 1 AP 12
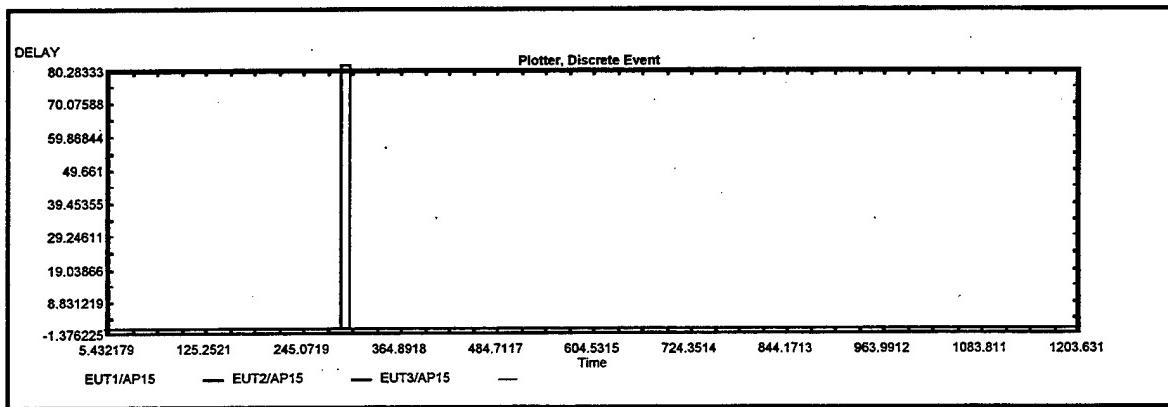


Run 1 AP 15
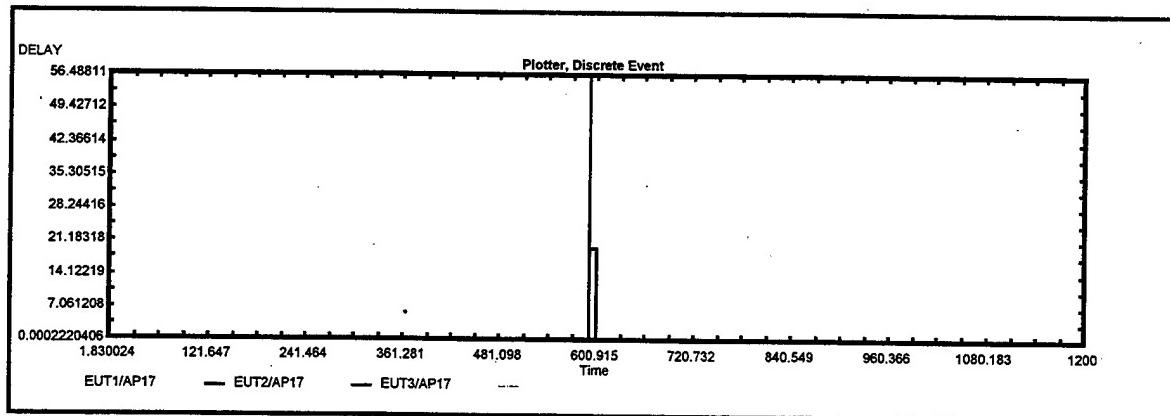
Run 1 AP 17
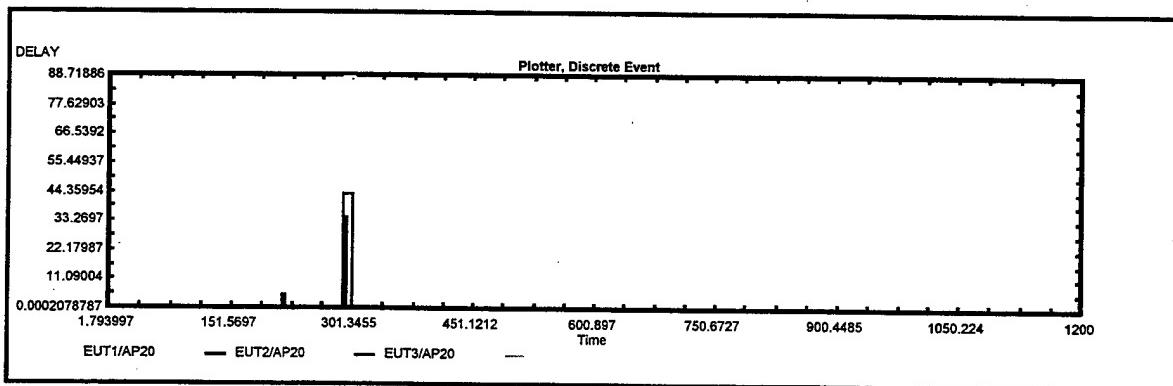


Run 1 AP 20
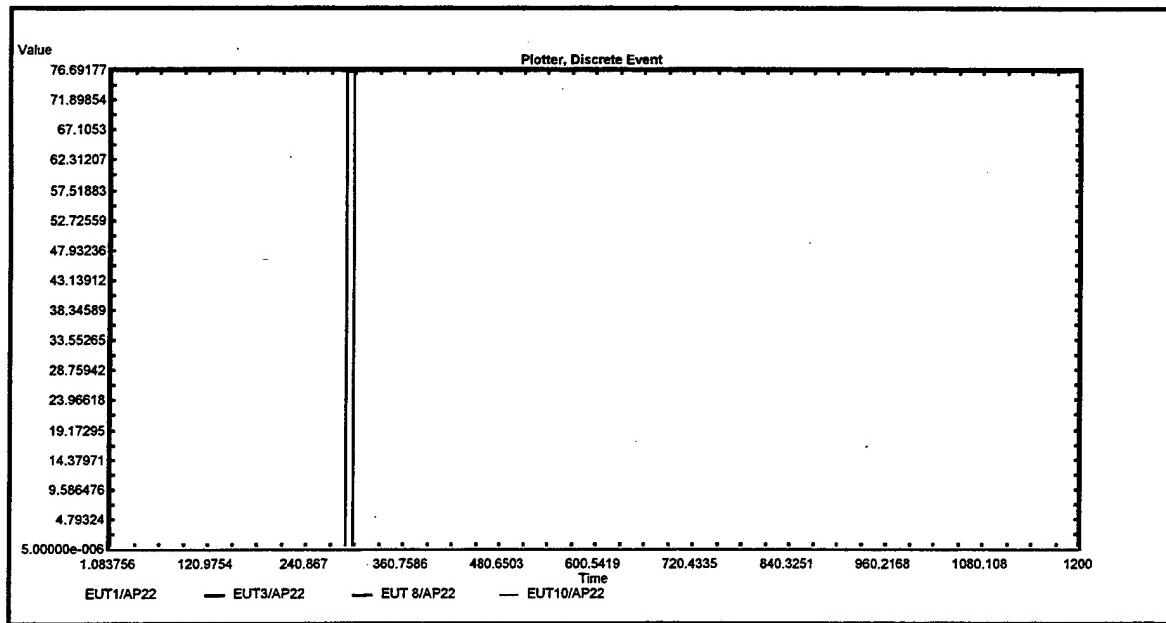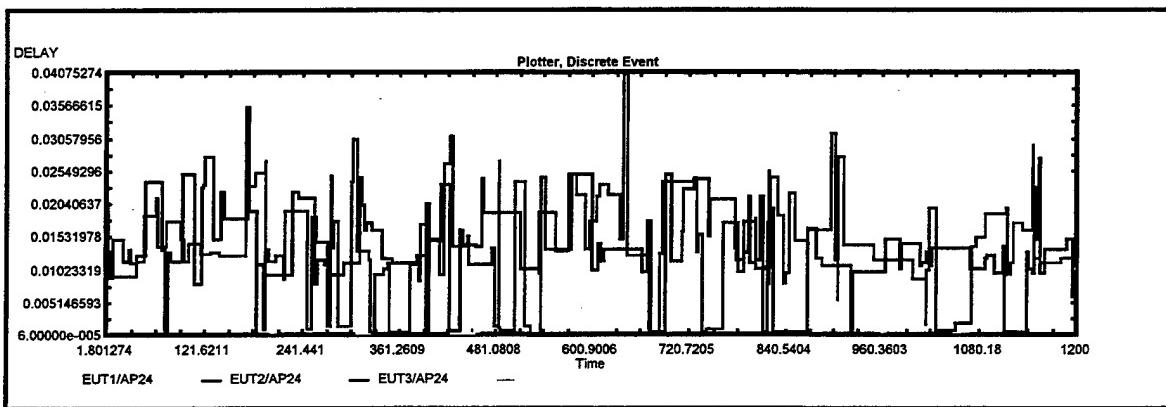
168

Run 1 AP 22



Run 1 AP 24

169

Run 1 AP 31



Run 1 AP 40

170

DELAY
Plotter, Discrete Event

0.04125245
0.03611462
0.03097679
0.02583897
0.02070114
0.01556331
0.01042548
0.005287656
0.0001498279

1.806274    121.6256    241.445    361.2644    481.0838    600.9031    720.7225    840.5419    960.3613    1080.181    1200
Time

EUT1/AP41 ⎯⎯ EUT2/AP41 ⎯⎯ EUT3/AP41 ⎯⎯

Run 1  AP 41

171
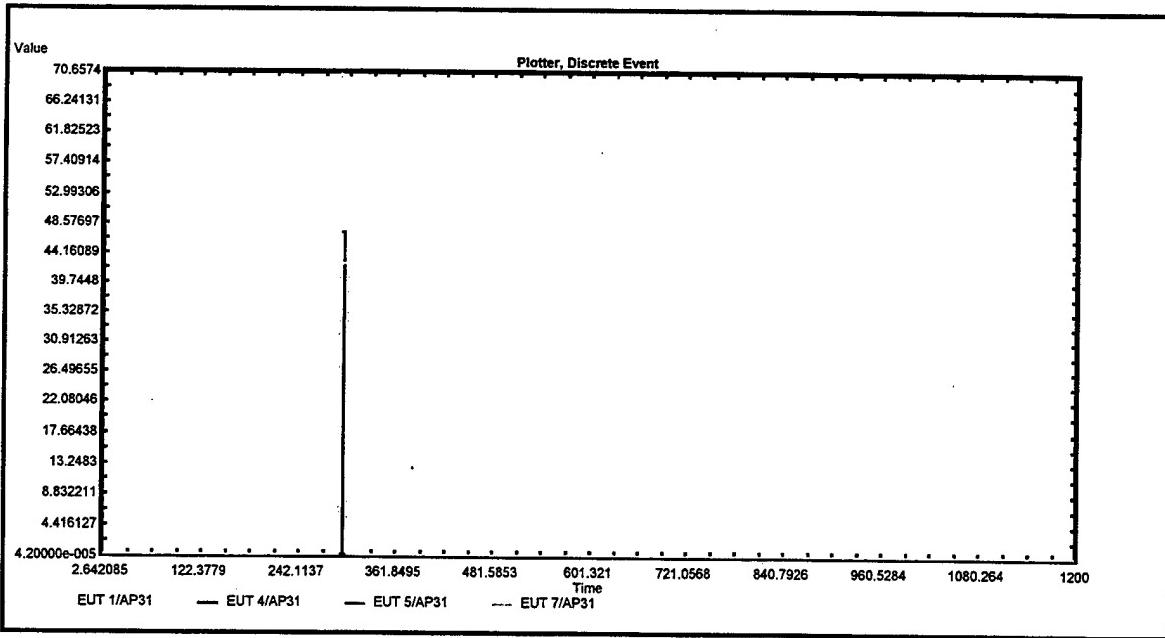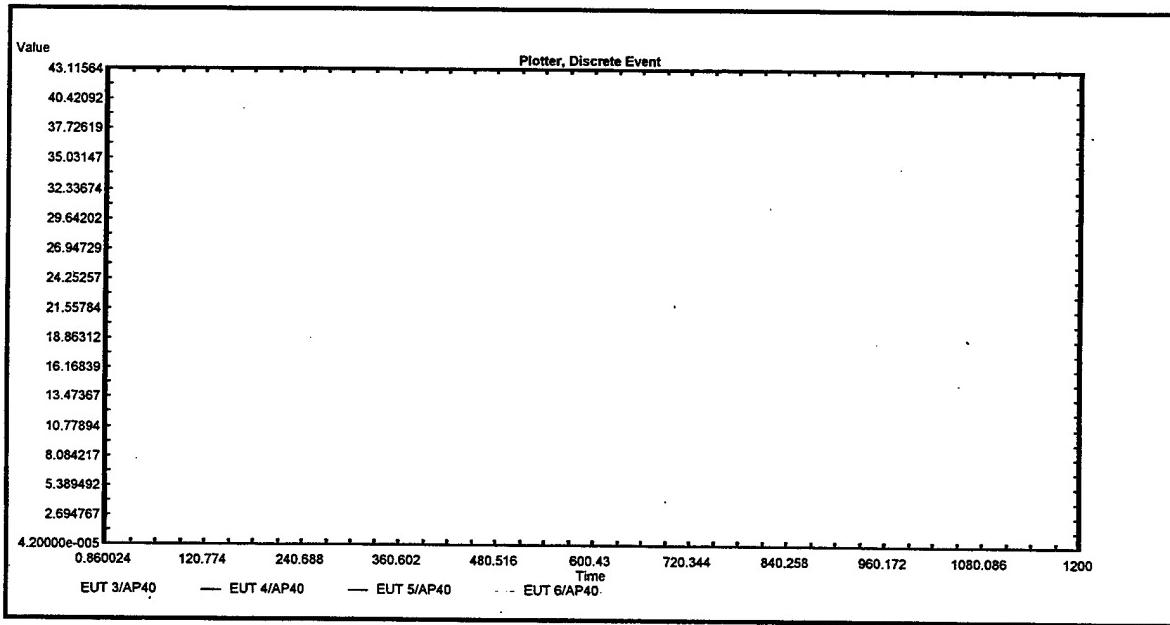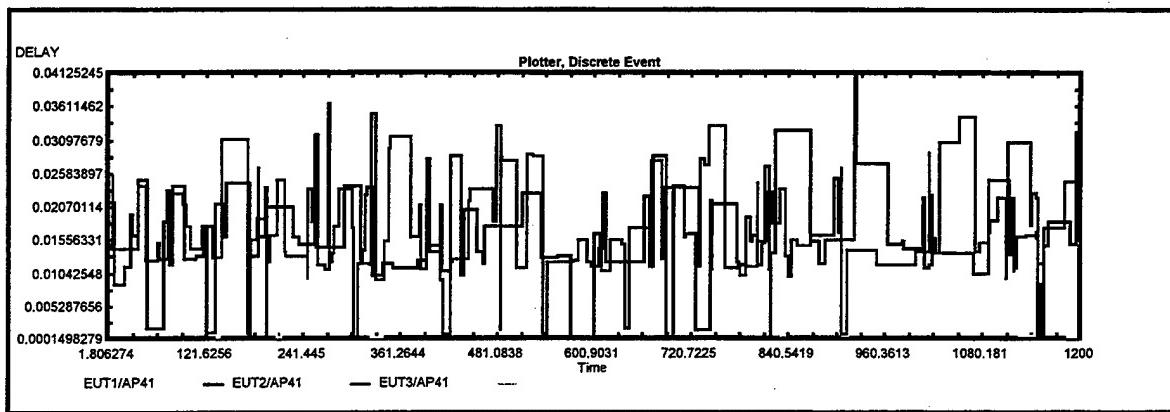
INFORMATION      RUN 1 VTC W/AP 5 AT 200SEC AND AP1 AT 500 SEC,    2MB

Information                          **block number 629**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 951.16252 | 1.0000000 | 0.037713601 | 8.0000000 | 5.0000000 |
| 1001.1250 | 1.0000000 | 0.019880316 | 4.0000000 | 4.0000000 |
| 1016.4250 | 1.0000000 | 0.023719687 | 4.0000000 | 4.0000000 |
| 1017.2538 | 1.0000000 | 0.031106091 | 8.0000000 | 16.000000 |
| 1019.8500 | 1.0000000 | 0.019578555 | 4.0000000 | 5.0000000 |
| 1030.0875 | 1.0000000 | 0.019199094 | 4.0000000 | 4.0000000 |
| 1053.0250 | 1.0000000 | 0.023135073 | 4.0000000 | 4.0000000 |
| 1072.3563 | 1.0000000 | 0.023502625 | 7.0000000 | 4.0000000 |
| 1078.7250 | 1.0000000 | 0.023666154 | 4.0000000 | 4.0000000 |
| 1088.5750 | 1.0000000 | 0.029736206 | 8.0000000 | 5.0000000 |
| 1114.1500 | 1.0000000 | 0.01938544 | 4.0000000 | 5.0000000 |
| 1115.7000 | 1.0000000 | 0.020537915 | 7.0000000 | 5.0000000 |
| 1119.2500 | 1.0000000 | 0.020486258 | 4.0000000 | 4.0000000 |
| 1119.4413 | 1.0000000 | 0.024688784 | 4.0000000 | 16.000000 |
| 1124.5407 | 1.0000000 | 0.00036652962 | 4.0000000 | 1.0000000 |
| 1134.4875 | 1.0000000 | 0.023489416 | 4.0000000 | 5.0000000 |
| 1146.5479 | 1.0000000 | 0.00099519502 | 6.0000000 | 1.0000000 |
| 1147.2000 | 1.0000000 | 0.022840364 | 4.0000000 | 4.0000000 |
| 1148.3313 | 1.0000000 | 0.020436545 | 4.0000000 | 5.0000000 |
| 1156.7563 | 1.0000000 | 0.02098415 | 4.0000000 | 4.0000000 |
| 1182.2438 | 1.0000000 | 0.023062291 | 4.0000000 | 5.0000000 |

Information                          **block number 969**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.74377 | 1.0000000 | 0.024629545 | 4.0000000 | 5.0000000 |
| 949.96877 | 1.0000000 | 0.020570234 | 4.0000000 | 5.0000000 |
| 962.31877 | 1.0000000 | 0.02000621 | 4.0000000 | 4.0000000 |
| 966.38752 | 1.0000000 | 0.019698726 | 4.0000000 | 5.0000000 |
| 978.18752 | 1.0000000 | 0.0194543 | 4.0000000 | 5.0000000 |
| 999.11252 | 1.0000000 | 0.026126336 | 5.0000000 | 4.0000000 |
| 1023.6975 | 1.0000000 | 0.028491786 | 7.0000000 | 17.000000 |
| 1029.4875 | 1.0000000 | 0.020152668 | 4.0000000 | 5.0000000 |
| 1050.4500 | 1.0000000 | 0.02325019 | 6.0000000 | 4.0000000 |
| 1069.0563 | 1.0000000 | 0.024776078 | 5.0000000 | 5.0000000 |
| 1082.2250 | 1.0000000 | 0.020336747 | 4.0000000 | 5.0000000 |
| 1083.9375 | 1.0000000 | 0.018904322 | 4.0000000 | 5.0000000 |
| 1087.3688 | 1.0000000 | 0.024092596 | 4.0000000 | 4.0000000 |
| 1089.8750 | 1.0000000 | 0.019552746 | 5.0000000 | 5.0000000 |
| 1090.8438 | 1.0000000 | 0.021123871 | 6.0000000 | 5.0000000 |
| 1103.1625 | 1.0000000 | 0.023190068 | 4.0000000 | 4.0000000 |
| 1110.4063 | 1.0000000 | 0.02702888 | 8.0000000 | 5.0000000 |
| 1111.2938 | 1.0000000 | 0.018824078 | 8.0000000 | 5.0000000 |
| 1116.3313 | 1.0000000 | 0.024367099 | 4.0000000 | 5.0000000 |
| 1117.8438 | 1.0000000 | 0.019783293 | 4.0000000 | 4.0000000 |
| 1127.0375 | 1.0000000 | 0.023319375 | 4.0000000 | 4.0000000 |
| 1151.3625 | 1.0000000 | 0.018997253 | 4.0000000 | 4.0000000 |
| 1161.4000 | 1.0000000 | 0.024714715 | 4.0000000 | 5.0000000 |
| 1168.7501 | 1.0000000 | 0.00043280035 | 4.0000000 | 1.0000000 |
| 1185.0188 | 1.0000000 | 0.02419502 | 4.0000000 | 4.0000000 |
| 1185.0688 | 1.0000000 | 0.020209719 | 8.0000000 | 4.0000000 |
| 1196.1813 | 1.0000000 | 0.021263046 | 4.0000000 | 4.0000000 |

Information                          **block number 4915**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1016.4275 | 1.0000000 | 0.026219687 | 4.0000000 | 31.000000 |
| 1017.2525 | 1.0000000 | 0.029856091 | 4.0000000 | 38.000000 |
| 1019.8588 | 1.0000000 | 0.028328555 | 4.0000000 | 36.000000 |
| 1030.0963 | 1.0000000 | 0.027949094 | 4.0000000 | 31.000000 |
| 1053.0275 | 1.0000000 | 0.025635073 | 4.0000000 | 31.000000 |
| 1072.3713 | 1.0000000 | 0.038502625 | 4.0000000 | 32.000000 |

172

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1078.7275 | 1.0000000 | 0.026166154 | 5.0000000 | 34.000000 |
| 1088.5713 | 1.0000000 | 0.025986206 | 4.0000000 | 38.000000 |
| 1114.1588 | 1.0000000 | 0.02813544 | 7.0000000 | 37.000000 |
| 1115.7088 | 1.0000000 | 0.029287915 | 5.0000000 | 38.000000 |
| 1119.2713 | 1.0000000 | 0.041736258 | 4.0000000 | 32.000000 |
| 1119.4463 | 1.0000000 | 0.029688784 | 4.0000000 | 38.000000 |
| 1124.5418 | 1.0000000 | 0.0014600867 | 4.0000000 | 19.000000 |
| 1134.4900 | 1.0000000 | 0.025989416 | 5.0000000 | 34.000000 |
| 1146.5488 | 1.0000000 | 0.0018779954 | 7.0000000 | 19.000000 |
| 1147.1779 | 1.0000000 | 0.0007627801 | 7.0000000 | 19.000000 |
| 1148.3400 | 1.0000000 | 0.029186545 | 4.0000000 | 34.000000 |
| 1156.7838 | 1.0000000 | 0.04848415 | 5.0000000 | 32.000000 |
| 1182.2463 | 1.0000000 | 0.025562291 | 4.0000000 | 38.000000 |

Information        **block number 7542**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1117.4886 | 1.0000000 | 0.0018640223 | 6.0000000 | 5.0000000 |
| 1129.6438 | 1.0000000 | 0.014470277 | 5.0000000 | 22.000000 |
| 1137.5667 | 1.0000000 | 0.00096675955 | 5.0000000 | 4.0000000 |
| 1138.4266 | 1.0000000 | 0.00014297234 | 5.0000000 | 5.0000000 |
| 1139.7675 | 1.0000000 | 0.016236268 | 4.0000000 | 31.000000 |
| 1151.0860 | 1.0000000 | 0.00049491865 | 4.0000000 | 4.0000000 |
| 1160.9813 | 1.0000000 | 0.015291298 | 5.0000000 | 22.000000 |
| 1164.5375 | 1.0000000 | 0.01080235 | 5.0000000 | 22.000000 |

Information        **block number 9086**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1042.1588 | 1.0000000 | 0.00052403414 | 4.0000000 | 13.000000 |
| 1052.6750 | 1.0000000 | 0.013605192 | 4.0000000 | 14.000000 |
| 1069.3900 | 1.0000000 | 0.021518933 | 4.0000000 | 16.000000 |
| 1118.8644 | 1.0000000 | 0.0020169775 | 7.0000000 | 5.0000000 |
| 1138.8007 | 1.0000000 | 0.00062836551 | 5.0000000 | 13.000000 |
| 1156.3125 | 1.0000000 | 0.012161892 | 4.0000000 | 22.000000 |
| 1159.6463 | 1.0000000 | 0.024014305 | 5.0000000 | 17.000000 |
| 1175.2124 | 1.0000000 | 0.0012079266 | 6.0000000 | 5.0000000 |
| 1184.2850 | 1.0000000 | 0.0004197344 | 5.0000000 | 4.0000000 |

Information        **block number 11085**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 971.26252 | 1.0000000 | 0.022848794 | 8.0000000 | 18.000000 |
| 973.32369 | 1.0000000 | 0.00093980596 | 5.0000000 | 12.000000 |
| 974.16877 | 1.0000000 | 0.0099278557 | 4.0000000 | 40.000000 |
| 977.74149 | 1.0000000 | 0.00016366606 | 4.0000000 | 4.0000000 |
| 1000.9763 | 1.0000000 | 0.0009540072 | 5.0000000 | 4.0000000 |
| 1005.9614 | 1.0000000 | 0.00011797554 | 4.0000000 | 5.0000000 |
| 1020.6750 | 1.0000000 | 0.010588423 | 4.0000000 | 40.000000 |
| 1035.8396 | 1.0000000 | 0.00032125973 | 4.0000000 | 5.0000000 |
| 1050.3246 | 1.0000000 | 0.00012341111 | 4.0000000 | 13.000000 |
| 1053.0500 | 1.0000000 | 0.0094445054 | 5.0000000 | 22.000000 |
| 1080.3309 | 1.0000000 | 0.00035134402 | 4.0000000 | 4.0000000 |
| 1111.1250 | 1.0000000 | 0.010994663 | 4.0000000 | 40.000000 |
| 1111.8988 | 1.0000000 | 0.013576156 | 4.0000000 | 31.000000 |
| 1119.2709 | 1.0000000 | 0.0098441891 | 8.0000000 | 5.0000000 |
| 1133.1500 | 1.0000000 | 0.011716576 | 4.0000000 | 40.000000 |
| 1137.0413 | 1.0000000 | 0.00030323876 | 4.0000000 | 12.000000 |
| 1150.4208 | 1.0000000 | 0.00075768286 | 5.0000000 | 4.0000000 |
| 1178.8999 | 1.0000000 | 0.000503223 | 4.0000000 | 5.0000000 |
| 1191.8438 | 1.0000000 | 0.01187032 | 4.0000000 | 14.000000 |
| 1195.0813 | 1.0000000 | 0.012720051 | 4.0000000 | 18.000000 |

Information        **block number 17386**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.74627 | 1.0000000 | 0.027129545 | 4.0000000 | 18.000000 |
| 949.97127 | 1.0000000 | 0.023070234 | 4.0000000 | 18.000000 |
| 962.29900 | 1.0000000 | 0.00022955093 | 4.0000000 | 14.000000 |
| 966.39002 | 1.0000000 | 0.022198726 | 4.0000000 | 18.000000 |
| 978.19127 | 1.0000000 | 0.0232043 | 6.0000000 | 22.000000 |
| 999.09627 | 1.0000000 | 0.0098763355 | 5.0000000 | 5.0000000 |

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1023.7063 | 1.0000000 | 0.037241786 | 4.0000000 | 40.000000 |
| 1029.4913 | 1.0000000 | 0.023902668 | 4.0000000 | 22.000000 |
| 1050.4272 | 1.0000000 | 0.00044913722 | 5.0000000 | 14.000000 |
| 1069.0613 | 1.0000000 | 0.029776078 | 4.0000000 | 31.000000 |
| 1082.2288 | 1.0000000 | 0.024086747 | 4.0000000 | 22.000000 |
| 1083.9413 | 1.0000000 | 0.022654322 | 4.0000000 | 22.000000 |
| 1087.3450 | 1.0000000 | 0.00031285227 | 4.0000000 | 14.000000 |
| 1089.8800 | 1.0000000 | 0.024552746 | 5.0000000 | 31.000000 |
| 1090.8475 | 1.0000000 | 0.024873871 | 5.0000000 | 22.000000 |
| 1103.1525 | 1.0000000 | 0.013190068 | 7.0000000 | 5.0000000 |
| 1110.4150 | 1.0000000 | 0.03577888 | 5.0000000 | 17.000000 |
| 1111.3213 | 1.0000000 | 0.046324078 | 5.0000000 | 17.000000 |
| 1116.3338 | 1.0000000 | 0.026867099 | 7.0000000 | 18.000000 |
| 1117.8242 | 1.0000000 | 0.00022225043 | 4.0000000 | 15.000000 |
| 1127.0156 | 1.0000000 | 0.0013471201 | 7.0000000 | 14.000000 |
| 1151.3775 | 1.0000000 | 0.033997253 | 4.0000000 | 16.000000 |
| 1161.4050 | 1.0000000 | 0.029714715 | 4.0000000 | 31.000000 |
| 1168.7638 | 1.0000000 | 0.014135394 | 4.0000000 | 4.0000000 |
| 1185.0088 | 1.0000000 | 0.01419502 | 5.0000000 | 5.0000000 |
| 1185.0493 | 1.0000000 | 0.000704058 | 5.0000000 | 14.000000 |
| 1196.1713 | 1.0000000 | 0.011263046 | 4.0000000 | 5.0000000 |

Information      **block number 17880**
 Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2750 | 1.0000000 | 0.018797183 | 4.0000000 | 22.000000 |
| 1089.3523 | 1.0000000 | 0.0001591018 | 4.0000000 | 4.0000000 |
| 1091.2563 | 1.0000000 | 0.0097236246 | 4.0000000 | 40.000000 |
| 1100.1063 | 1.0000000 | 0.0081328959 | 5.0000000 | 40.000000 |
| 1111.5750 | 1.0000000 | 0.013099962 | 4.0000000 | 40.000000 |
| 1111.8125 | 1.0000000 | 0.022385247 | 7.0000000 | 22.000000 |
| 1113.5563 | 1.0000000 | 0.00057555259 | 4.0000000 | 13.000000 |
| 1140.8577 | 1.0000000 | 0.00039233043 | 4.0000000 | 4.0000000 |
| 1141.7063 | 1.0000000 | 0.0088725788 | 5.0000000 | 40.000000 |
| 1148.1688 | 1.0000000 | 0.014424484 | 5.0000000 | 40.000000 |
| 1148.9750 | 1.0000000 | 0.0085354568 | 4.0000000 | 40.000000 |
| 1149.7045 | 1.0000000 | 0.0046844295 | 4.0000000 | 12.000000 |
| 1152.0250 | 1.0000000 | 0.024796483 | 5.0000000 | 22.000000 |
| 1153.7830 | 1.0000000 | 0.00026700475 | 4.0000000 | 12.000000 |
| 1156.4609 | 1.0000000 | 0.00027761416 | 4.0000000 | 4.0000000 |
| 1162.4948 | 1.0000000 | 0.00029969617 | 4.0000000 | 5.0000000 |
| 1189.2125 | 1.0000000 | 0.012274582 | 4.0000000 | 40.000000 |
| 1196.5625 | 1.0000000 | 0.014627812 | 5.0000000 | 18.000000 |

Information      **block number 26376**
 Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 949.98503 | 1.0000000 | 0.036824234 | 5.0000000 | 22.000000 |
| 962.30083 | 1.0000000 | 0.0020629389 | 4.0000000 | 10.000000 |
| 966.40378 | 1.0000000 | 0.035952726 | 4.0000000 | 22.000000 |
| 978.20503 | 1.0000000 | 0.0369583 | 4.0000000 | 31.000000 |
| 999.08802 | 1.0000000 | 0.0016192873 | 8.0000000 | 7.0000000 |
| 1023.7063 | 1.0000000 | 0.037241786 | 4.0000000 | 40.000000 |
| 1029.5050 | 1.0000000 | 0.037656668 | 5.0000000 | 31.000000 |
| 1050.4406 | 1.0000000 | 0.013856539 | 4.0000000 | 9.0000000 |
| 1069.0688 | 1.0000000 | 0.037276078 | 5.0000000 | 40.000000 |
| 1082.2413 | 1.0000000 | 0.036590747 | 4.0000000 | 22.000000 |
| 1083.9538 | 1.0000000 | 0.035158322 | 4.0000000 | 22.000000 |
| 1087.3458 | 1.0000000 | 0.001078296 | 4.0000000 | 9.0000000 |
| 1089.8925 | 1.0000000 | 0.037060746 | 5.0000000 | 31.000000 |
| 1090.8600 | 1.0000000 | 0.037377871 | 7.0000000 | 22.000000 |
| 1103.1481 | 1.0000000 | 0.0088058904 | 4.0000000 | 7.0000000 |
| 1110.4088 | 1.0000000 | 0.02952888 | 4.0000000 | 18.000000 |
| 1111.3025 | 1.0000000 | 0.027574078 | 6.0000000 | 18.000000 |
| 1116.3338 | 1.0000000 | 0.026867099 | 5.0000000 | 18.000000 |
| 1117.8475 | 1.0000000 | 0.023541293 | 7.0000000 | 12.000000 |
| 1127.0202 | 1.0000000 | 0.0060071999 | 4.0000000 | 9.0000000 |
| 1151.3550 | 1.0000000 | 0.011513253 | 4.0000000 | 13.000000 |
| 1161.4125 | 1.0000000 | 0.037214715 | 6.0000000 | 40.000000 |
| 1168.7504 | 1.0000000 | 0.00078826752 | 4.0000000 | 6.0000000 |
| 1184.9974 | 1.0000000 | 0.0027830541 | 6.0000000 | 7.0000000 |
| 1185.0499 | 1.0000000 | 0.0013743175 | 6.0000000 | 9.0000000 |

174

| 1196.1605 | 1.0000000 | 0.00045975885 | 4.0000000 | 7.0000000 |

Information        **block number 38893**
 Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.86002 | 1.0000000 | 0.013804318 | 6.0000000 | 26.000000 |
| 951.13627 | 1.0000000 | 0.011463601 | 4.0000000 | 27.000000 |
| 1001.1138 | 1.0000000 | 0.0086303158 | 7.0000000 | 22.000000 |
| 1016.4028 | 1.0000000 | 0.0015240583 | 7.0000000 | 24.000000 |
| 1017.2325 | 1.0000000 | 0.0098560906 | 5.0000000 | 29.000000 |
| 1019.8500 | 1.0000000 | 0.019578555 | 4.0000000 | 28.000000 |
| 1030.0689 | 1.0000000 | 0.00055724727 | 4.0000000 | 24.000000 |
| 1053.0035 | 1.0000000 | 0.0016560347 | 6.0000000 | 24.000000 |
| 1072.3463 | 1.0000000 | 0.013502625 | 5.0000000 | 25.000000 |
| 1078.7163 | 1.0000000 | 0.014916154 | 4.0000000 | 26.000000 |
| 1088.5638 | 1.0000000 | 0.018486206 | 7.0000000 | 29.000000 |
| 1114.1500 | 1.0000000 | 0.01938544 | 4.0000000 | 28.000000 |
| 1115.6888 | 1.0000000 | 0.009287915 | 5.0000000 | 29.000000 |
| 1119.2400 | 1.0000000 | 0.010486258 | 5.0000000 | 25.000000 |
| 1119.4275 | 1.0000000 | 0.010938784 | 4.0000000 | 30.000000 |
| 1124.5575 | 1.0000000 | 0.017184095 | 4.0000000 | 22.000000 |
| 1134.4800 | 1.0000000 | 0.015989416 | 4.0000000 | 27.000000 |
| 1146.5763 | 1.0000000 | 0.029330205 | 8.0000000 | 22.000000 |
| 1147.1950 | 1.0000000 | 0.017840364 | 8.0000000 | 22.000000 |
| 1148.3225 | 1.0000000 | 0.011686545 | 6.0000000 | 26.000000 |
| 1156.7463 | 1.0000000 | 0.01098415 | 4.0000000 | 25.000000 |
| 1182.2325 | 1.0000000 | 0.011812291 | 4.0000000 | 29.000000 |

Information        **block number 43037**
 Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 714.52127 | 1.0000000 | 0.013022651 | 7.0000000 | 4.0000000 |
| 718.77752 | 1.0000000 | 0.011509212 | 4.0000000 | 4.0000000 |
| 723.42756 | 1.0000000 | 0.0040437587 | 8.0000000 | 30.000000 |
| 724.09377 | 1.0000000 | 0.0119148 | 5.0000000 | 24.000000 |
| 725.03574 | 1.0000000 | 0.00014282236 | 4.0000000 | 29.000000 |
| 727.55730 | 1.0000000 | 0.00090127968 | 5.0000000 | 25.000000 |
| 730.66502 | 1.0000000 | 0.014713369 | 7.0000000 | 4.0000000 |
| 740.82611 | 1.0000000 | 0.00036734268 | 4.0000000 | 28.000000 |
| 758.57738 | 1.0000000 | 0.0060167417 | 8.0000000 | 29.000000 |
| 764.28502 | 1.0000000 | 0.041243963 | 5.0000000 | 40.000000 |
| 769.28502 | 1.0000000 | 0.01159624 | 4.0000000 | 5.0000000 |
| 773.82808 | 1.0000000 | 0.00025476568 | 4.0000000 | 22.000000 |
| 774.14389 | 1.0000000 | 0.00070778405 | 7.0000000 | 28.000000 |
| 797.17662 | 1.0000000 | 0.00099628242 | 6.0000000 | 22.000000 |
| 823.16912 | 1.0000000 | 0.00032301637 | 4.0000000 | 28.000000 |
| 824.17448 | 1.0000000 | 0.0047157025 | 8.0000000 | 29.000000 |
| 828.84300 | 1.0000000 | 0.0068616577 | 8.0000000 | 27.000000 |
| 829.62718 | 1.0000000 | 0.00040027171 | 4.0000000 | 28.000000 |
| 829.92400 | 1.0000000 | 0.00035192641 | 4.0000000 | 27.000000 |
| 843.52826 | 1.0000000 | 0.0035989053 | 8.0000000 | 29.000000 |
| 844.47554 | 1.0000000 | 0.00044823138 | 4.0000000 | 29.000000 |
| 860.06252 | 1.0000000 | 0.012221056 | 6.0000000 | 23.000000 |
| 869.79083 | 1.0000000 | 0.0017445132 | 7.0000000 | 22.000000 |
| 878.33801 | 1.0000000 | 9.3129912e-005 | 4.0000000 | 26.000000 |
| 879.21677 | 1.0000000 | 0.00096463971 | 6.0000000 | 27.000000 |
| 911.75566 | 1.0000000 | 6.0000000e-005 | 4.0000000 | 25.000000 |
| 925.44127 | 1.0000000 | 0.010292461 | 7.0000000 | 5.0000000 |
| 938.75877 | 1.0000000 | 0.024261217 | 5.0000000 | 31.000000 |
| 948.18791 | 1.0000000 | 0.0040530968 | 8.0000000 | 22.000000 |
| 976.82958 | 1.0000000 | 0.0018537346 | 6.0000000 | 30.000000 |
| 995.51002 | 1.0000000 | 0.040051766 | 4.0000000 | 40.000000 |
| 1013.4420 | 1.0000000 | 0.00034579588 | 4.0000000 | 28.000000 |
| 1015.6604 | 1.0000000 | 0.00082953631 | 5.0000000 | 29.000000 |
| 1027.0378 | 1.0000000 | 0.001672697 | 6.0000000 | 22.000000 |
| 1052.1938 | 1.0000000 | 0.013594577 | 8.0000000 | 23.000000 |
| 1063.5775 | 1.0000000 | 0.0090365572 | 4.0000000 | 4.0000000 |
| 1069.5609 | 1.0000000 | 6.0000000e-005 | 4.0000000 | 26.000000 |
| 1090.6600 | 1.0000000 | 0.038710794 | 5.0000000 | 40.000000 |
| 1131.2432 | 1.0000000 | 0.00075810367 | 5.0000000 | 22.000000 |
| 1132.5363 | 1.0000000 | 0.027780202 | 5.0000000 | 18.000000 |
| 1136.4988 | 1.0000000 | 0.041058576 | 8.0000000 | 18.000000 |

| | | | | |
|---|---|---|---|---|
| 1151.2482 | 1.0000000 | 0.00039607776 | 4.0000000 | 26.000000 |
| 1191.3594 | 1.0000000 | 0.00076336722 | 5.0000000 | 30.000000 |

Information
Input Parameters:

**block number 58438**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1110.2397 | 1.0000000 | 0.00023660861 | 4.0000000 | 34.000000 |
| 1181.2538 | 1.0000000 | 0.026385033 | 4.0000000 | 40.000000 |
| 1199.2000 | 1.0000000 | 0.016872627 | 7.0000000 | 32.000000 |

Information
Input Parameters:

**block number 69342**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2663 | 1.0000000 | 0.010047183 | 4.0000000 | 44.000000 |
| 1089.3688 | 1.0000000 | 0.016659086 | 4.0000000 | 40.000000 |
| 1091.2650 | 1.0000000 | 0.018473625 | 5.0000000 | 48.000000 |
| 1100.1200 | 1.0000000 | 0.021882896 | 4.0000000 | 47.000000 |
| 1111.5713 | 1.0000000 | 0.0093499622 | 4.0000000 | 48.000000 |
| 1111.8038 | 1.0000000 | 0.013635247 | 7.0000000 | 44.000000 |
| 1113.5863 | 1.0000000 | 0.030512171 | 5.0000000 | 42.000000 |
| 1140.8750 | 1.0000000 | 0.017705048 | 8.0000000 | 40.000000 |
| 1141.7200 | 1.0000000 | 0.022622579 | 5.0000000 | 47.000000 |
| 1148.1763 | 1.0000000 | 0.021924484 | 4.0000000 | 47.000000 |
| 1148.9775 | 1.0000000 | 0.011035457 | 4.0000000 | 48.000000 |
| 1149.7000 | 1.0000000 | 0.0001787039 | 4.0000000 | 41.000000 |
| 1152.0088 | 1.0000000 | 0.0085464827 | 5.0000000 | 43.000000 |
| 1153.7830 | 1.0000000 | 0.00029619691 | 4.0000000 | 41.000000 |
| 1156.4750 | 1.0000000 | 0.014392245 | 4.0000000 | 40.000000 |
| 1162.5125 | 1.0000000 | 0.01805089 | 7.0000000 | 40.000000 |
| 1189.2150 | 1.0000000 | 0.014774582 | 6.0000000 | 48.000000 |
| 1196.5800 | 1.0000000 | 0.032127812 | 5.0000000 | 42.000000 |

Information
Input Parameters:

**block number 77152**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1079.9000 | 1.0000000 | 0.033755942 | 4.0000000 | 22.000000 |
| 1091.9913 | 1.0000000 | 0.016132579 | 6.0000000 | 5.0000000 |
| 1092.9938 | 1.0000000 | 0.015686684 | 6.0000000 | 42.000000 |
| 1107.1120 | 1.0000000 | 0.0014803325 | 7.0000000 | 44.000000 |
| 1112.0430 | 1.0000000 | 0.00018369461 | 4.0000000 | 45.000000 |
| 1125.1850 | 1.0000000 | 0.01595985 | 7.0000000 | 5.0000000 |
| 1125.6729 | 1.0000000 | 0.00021522984 | 4.0000000 | 44.000000 |
| 1128.8638 | 1.0000000 | 0.0082065213 | 7.0000000 | 41.000000 |
| 1135.6743 | 1.0000000 | 0.0014718386 | 5.0000000 | 40.000000 |
| 1142.9788 | 1.0000000 | 0.00052243624 | 5.0000000 | 48.000000 |
| 1171.0121 | 1.0000000 | 0.021823023 | 5.0000000 | 41.000000 |
| 1171.5040 | 1.0000000 | 0.0017355344 | 7.0000000 | 46.000000 |

Information
Input Parameters:

**block number 83021**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2675 | 1.0000000 | 0.011297183 | 4.0000000 | 5.0000000 |
| 1089.3800 | 1.0000000 | 0.027913086 | 4.0000000 | 4.0000000 |
| 1091.2471 | 1.0000000 | 0.00050926094 | 5.0000000 | 17.000000 |
| 1100.1011 | 1.0000000 | 0.0029136601 | 4.0000000 | 17.000000 |
| 1111.8050 | 1.0000000 | 0.014885247 | 4.0000000 | 5.0000000 |
| 1113.5675 | 1.0000000 | 0.011766171 | 4.0000000 | 5.0000000 |
| 1140.8863 | 1.0000000 | 0.028959048 | 4.0000000 | 4.0000000 |
| 1141.6989 | 1.0000000 | 0.0014986972 | 4.0000000 | 17.000000 |
| 1148.1556 | 1.0000000 | 0.0012189936 | 4.0000000 | 17.000000 |
| 1148.9671 | 1.0000000 | 0.00063110147 | 4.0000000 | 17.000000 |
| 1149.7238 | 1.0000000 | 0.023998101 | 4.0000000 | 4.0000000 |
| 1152.0238 | 1.0000000 | 0.023546483 | 5.0000000 | 5.0000000 |
| 1153.8113 | 1.0000000 | 0.028594636 | 4.0000000 | 4.0000000 |
| 1156.4863 | 1.0000000 | 0.025646245 | 4.0000000 | 4.0000000 |
| 1162.5238 | 1.0000000 | 0.02930489 | 4.0000000 | 4.0000000 |
| 1189.2013 | 1.0000000 | 0.0010341965 | 5.0000000 | 17.000000 |
| 1196.5675 | 1.0000000 | 0.019627812 | 5.0000000 | 5.0000000 |
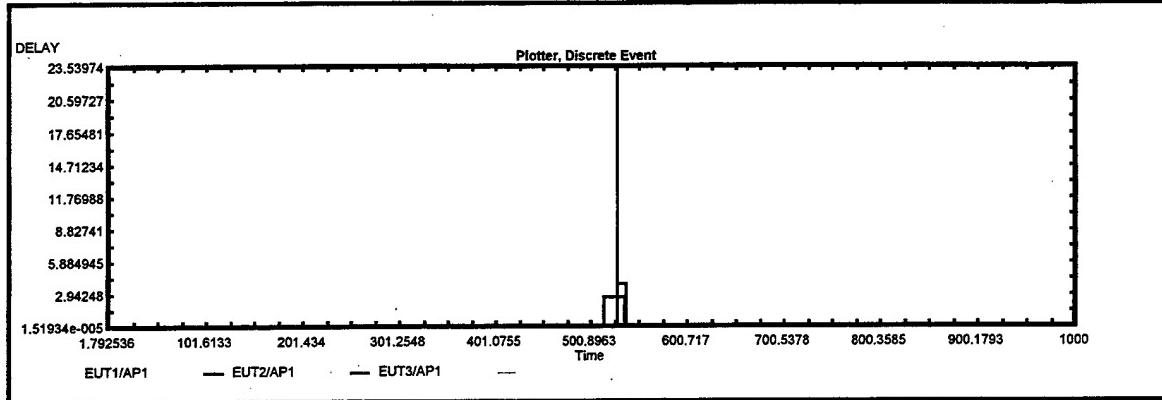
Run 2 AP 2
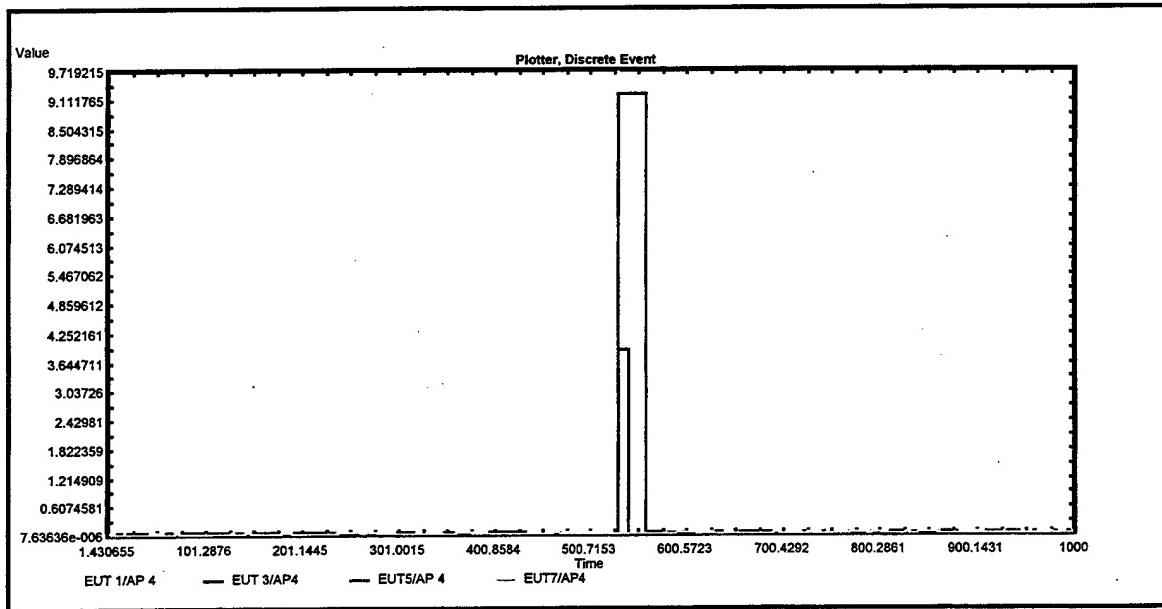


Run 2 AP 4
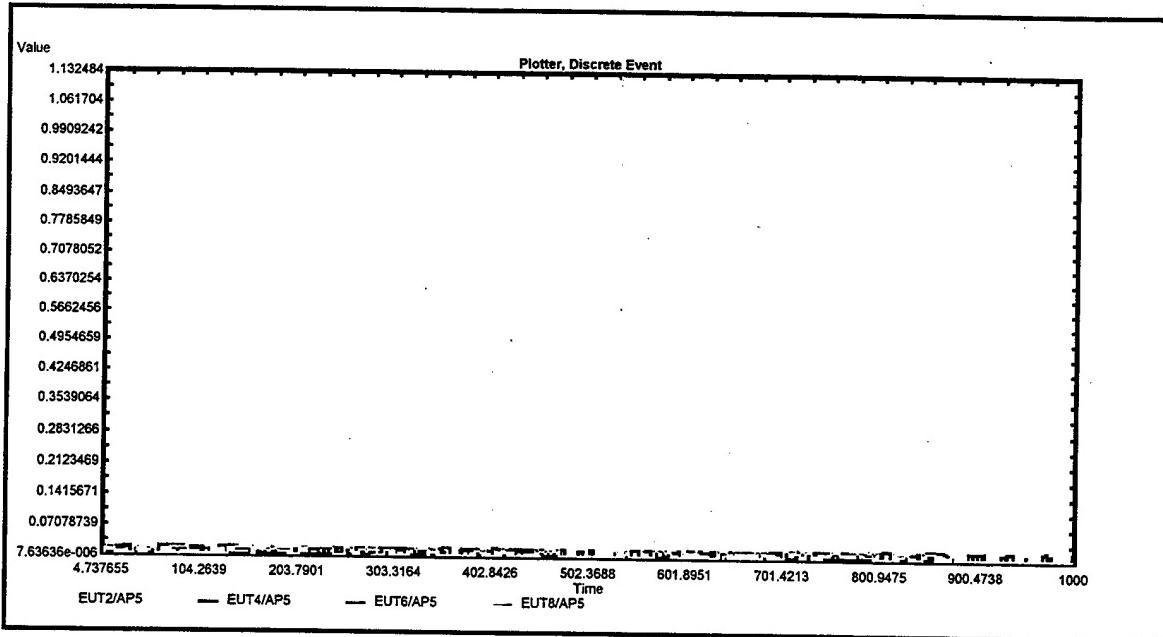
Run 2 AP 5
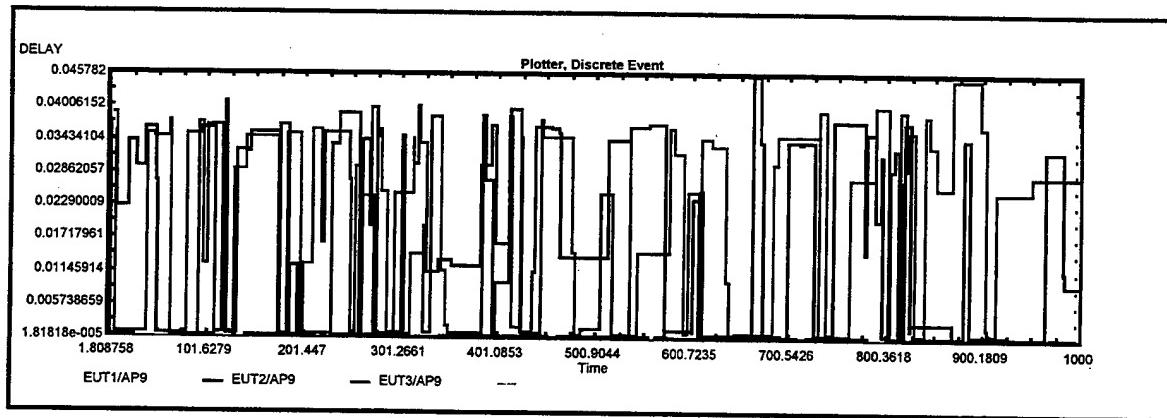


Run 2 AP 9
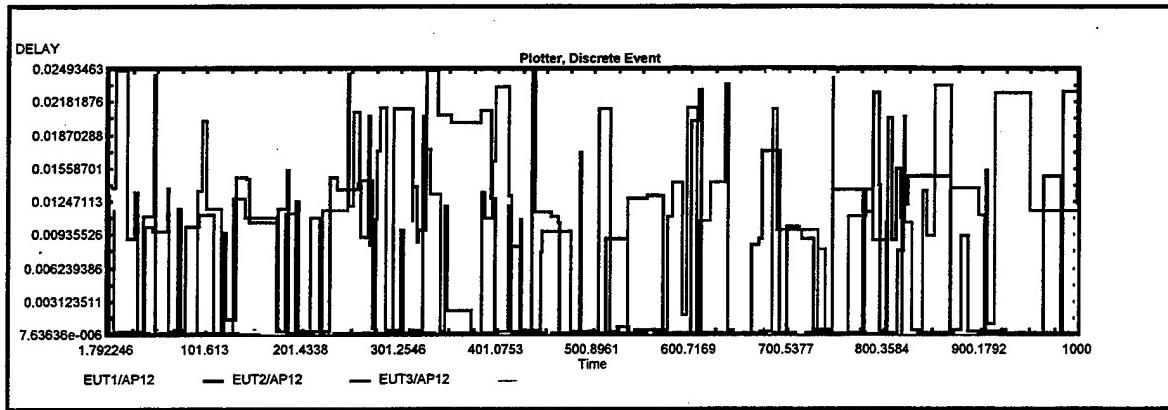
Run 2 AP 12
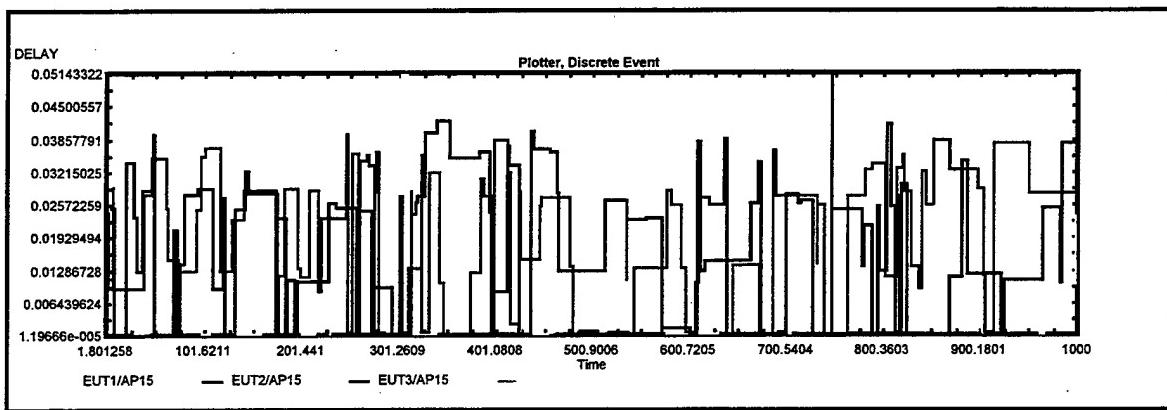


Run 2 AP 15
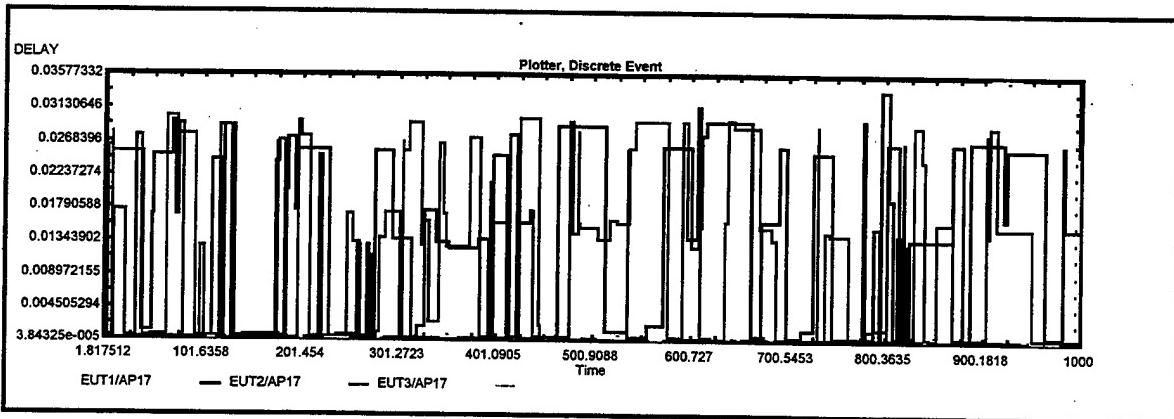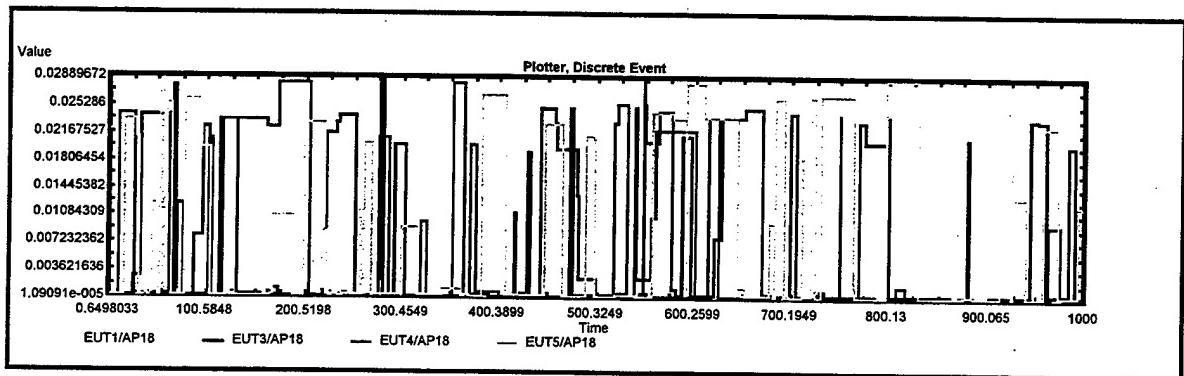
179

Run 2 AP 17



Run 2 AP 18
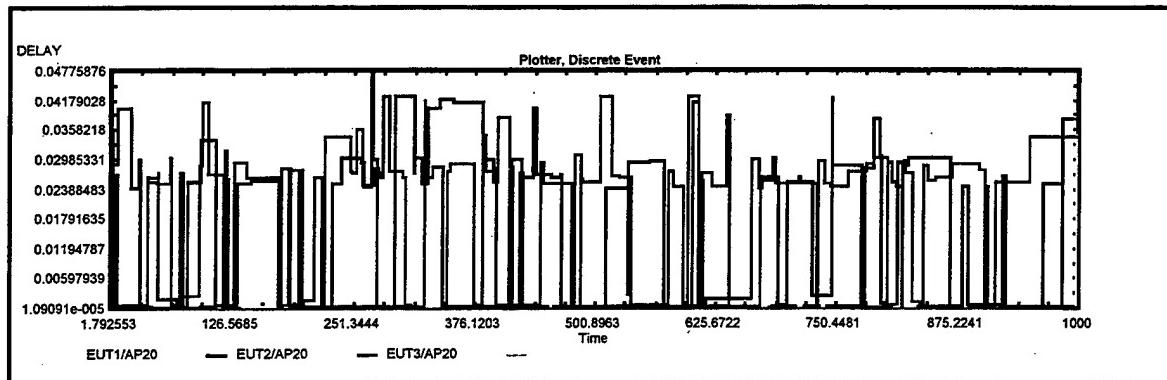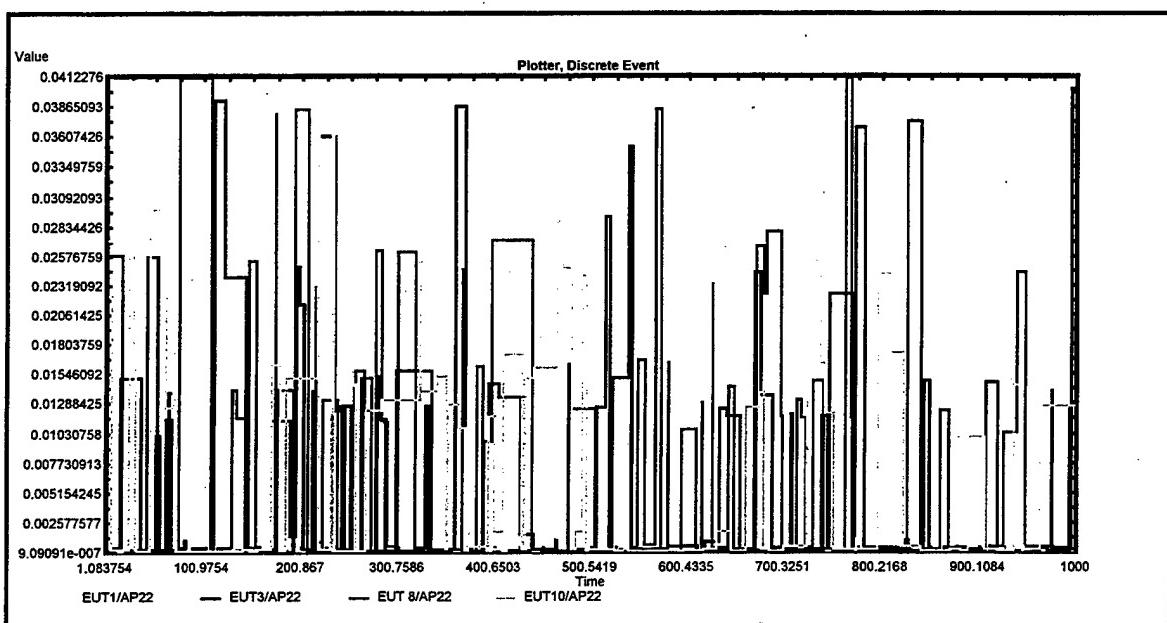
180

Run 2 AP 20



Run 2 AP 22
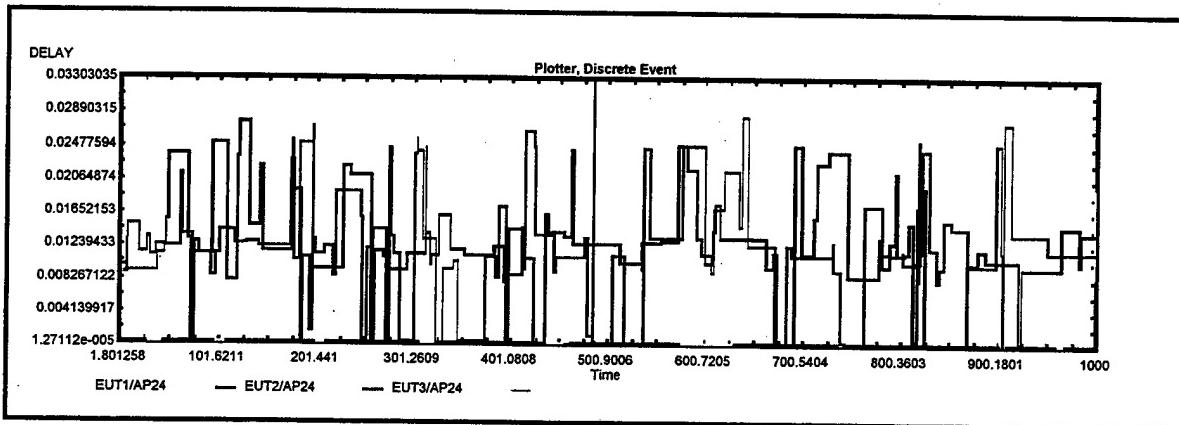
181

Run 2 AP 24



Run 2 AP 31

182
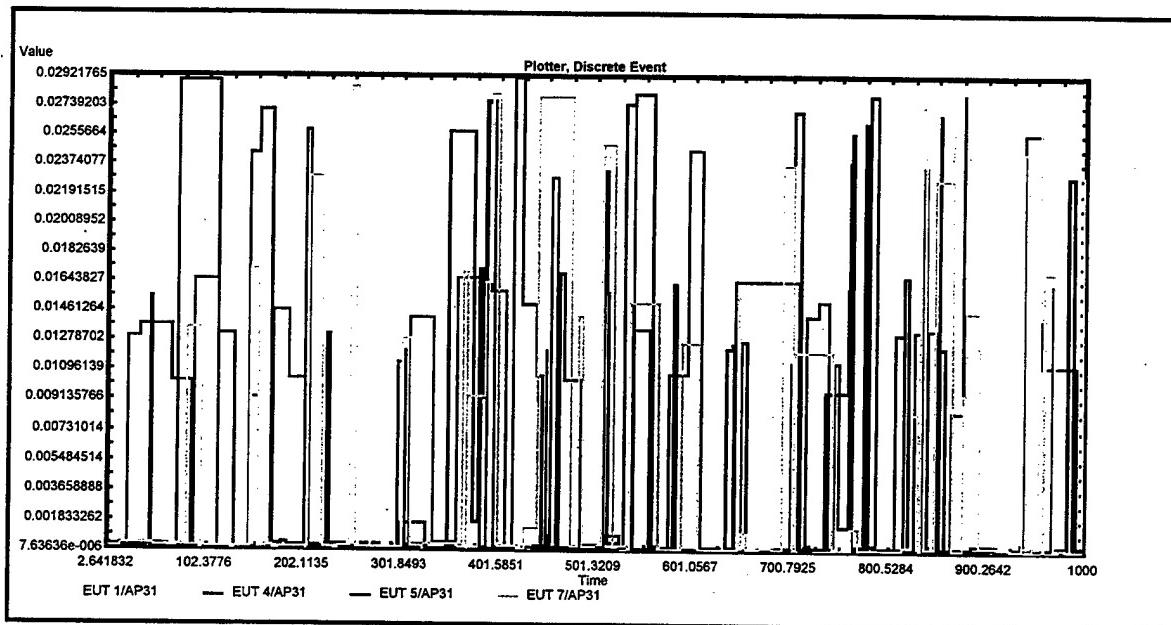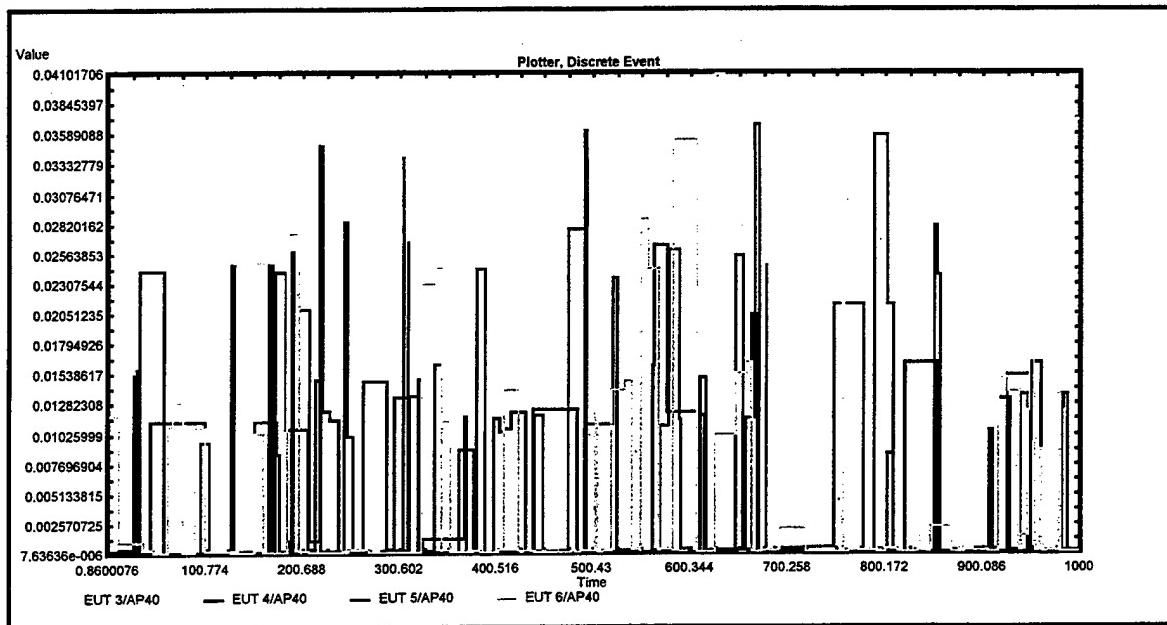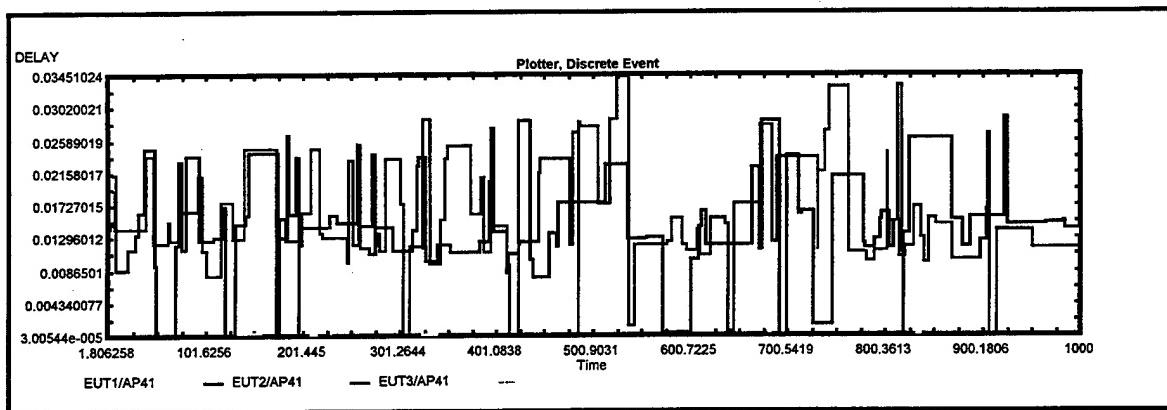
Run 2 AP 40



Run 2 AP 41

INFORMATION    RUN 2 VTC W/AP 1 AT 500 SEC.   11 MB

Information    **block number 629**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.86876 | 1.0000000 | 0.022537955 | 7.0000000 | 4.0000000 |
| 951.14376 | 1.0000000 | 0.018947237 | 7.0000000 | 5.0000000 |

Information    **block number 969**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.74376 | 1.0000000 | 0.024613182 | 5.0000000 | 5.0000000 |
| 949.98126 | 1.0000000 | 0.03305387 | 8.0000000 | 5.0000000 |
| 962.31876 | 1.0000000 | 0.019989846 | 4.0000000 | 4.0000000 |
| 966.38751 | 1.0000000 | 0.019682362 | 4.0000000 | 5.0000000 |
| 978.18751 | 1.0000000 | 0.019437936 | 4.0000000 | 5.0000000 |
| 999.10626 | 1.0000000 | 0.019859972 | 4.0000000 | 4.0000000 |

Information    **block number 4915**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.87126 | 1.0000000 | 0.025037955 | 4.0000000 | 34.000000 |
| 951.15876 | 1.0000000 | 0.033947237 | 4.0000000 | 34.000000 |

Information    **block number 7542**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 2.5400076 | 1.0000000 | 0.019215128 | 7.0000000 | 17.000000 |
| 5.5375076 | 1.0000000 | 0.011626694 | 5.0000000 | 40.000000 |
| 23.035363 | 1.0000000 | 2.5303444e-005 | 5.0000000 | 5.0000000 |
| 42.075008 | 1.0000000 | 0.014226987 | 4.0000000 | 40.000000 |
| 61.682035 | 1.0000000 | 0.00021178342 | 6.0000000 | 5.0000000 |
| 71.468758 | 1.0000000 | 0.02204454 | 4.0000000 | 18.000000 |
| 74.854708 | 1.0000000 | 6.5762407e-005 | 4.0000000 | 4.0000000 |
| 102.26340 | 1.0000000 | 0.00012590793 | 5.0000000 | 5.0000000 |
| 118.59376 | 1.0000000 | 0.014984101 | 7.0000000 | 40.000000 |
| 122.03787 | 1.0000000 | 7.7669449e-005 | 4.0000000 | 5.0000000 |
| 139.86251 | 1.0000000 | 0.011951884 | 7.0000000 | 14.000000 |
| 144.31501 | 1.0000000 | 0.022144944 | 5.0000000 | 17.000000 |
| 149.27974 | 1.0000000 | 0.00020873088 | 6.0000000 | 5.0000000 |
| 159.81251 | 1.0000000 | 0.014331968 | 4.0000000 | 22.000000 |
| 162.38751 | 1.0000000 | 0.01039508 | 4.0000000 | 40.000000 |
| 171.77392 | 1.0000000 | 7.7497635e-005 | 4.0000000 | 5.0000000 |
| 173.23751 | 1.0000000 | 0.011197477 | 4.0000000 | 22.000000 |
| 175.76167 | 1.0000000 | 0.00019509624 | 5.0000000 | 5.0000000 |
| 181.33126 | 1.0000000 | 0.021682357 | 5.0000000 | 18.000000 |
| 181.40251 | 1.0000000 | 0.027868891 | 8.0000000 | 16.000000 |
| 183.83126 | 1.0000000 | 0.023397315 | 6.0000000 | 18.000000 |
| 191.73126 | 1.0000000 | 0.015347429 | 5.0000000 | 14.000000 |
| 238.39376 | 1.0000000 | 0.015446074 | 8.0000000 | 22.000000 |
| 263.82786 | 1.0000000 | 0.00015648484 | 5.0000000 | 5.0000000 |
| 267.64001 | 1.0000000 | 0.02083031 | 5.0000000 | 17.000000 |
| 280.44108 | 1.0000000 | 8.2775329e-005 | 5.0000000 | 4.0000000 |
| 327.75899 | 1.0000000 | 7.6363637e-006 | 4.0000000 | 5.0000000 |
| 337.19985 | 1.0000000 | 5.5559074e-005 | 5.0000000 | 4.0000000 |
| 339.49171 | 1.0000000 | 7.1910182e-005 | 4.0000000 | 4.0000000 |
| 361.11876 | 1.0000000 | 0.015695189 | 8.0000000 | 40.000000 |
| 378.76005 | 1.0000000 | 9.1307656e-005 | 4.0000000 | 4.0000000 |
| 406.51123 | 1.0000000 | 8.4203954e-005 | 5.0000000 | 5.0000000 |
| 417.24376 | 1.0000000 | 0.014569377 | 5.0000000 | 14.000000 |
| 422.68126 | 1.0000000 | 0.013902489 | 4.0000000 | 40.000000 |
| 429.79319 | 1.0000000 | 3.6212302e-005 | 4.0000000 | 5.0000000 |
| 463.16251 | 1.0000000 | 0.023138935 | 4.0000000 | 18.000000 |
| 469.96445 | 1.0000000 | 0.00021438816 | 6.0000000 | 5.0000000 |
| 474.51876 | 1.0000000 | 0.011278092 | 4.0000000 | 22.000000 |
| 489.49671 | 1.0000000 | 0.00010602348 | 5.0000000 | 4.0000000 |
| 503.08154 | 1.0000000 | 0.0010038442 | 8.0000000 | 5.0000000 |
| 533.47382 | 1.0000000 | 7.6100455e-005 | 4.0000000 | 12.000000 |
| 537.04449 | 1.0000000 | 3.4479439e-005 | 4.0000000 | 5.0000000 |
| 557.47501 | 1.0000000 | 0.012613817 | 5.0000000 | 22.000000 |

184

| | | | | |
|---|---|---|---|---|
| 581.62751 | 1.0000000 | 0.023209659 | 4.0000000 | 17.000000 |
| 611.99082 | 1.0000000 | 7.6363636e-006 | 6.0000000 | 4.0000000 |
| 648.45028 | 1.0000000 | 5.8990193e-005 | 4.0000000 | 5.0000000 |
| 660.10001 | 1.0000000 | 0.011781799 | 4.0000000 | 40.000000 |
| 660.23126 | 1.0000000 | 0.011794229 | 4.0000000 | 40.000000 |
| 662.78488 | 1.0000000 | 0.00018654103 | 5.0000000 | 4.0000000 |
| 677.89376 | 1.0000000 | 0.011289506 | 4.0000000 | 14.000000 |
| 686.34995 | 1.0000000 | 5.1928324e-005 | 4.0000000 | 5.0000000 |
| 690.06876 | 1.0000000 | 0.01483766 | 5.0000000 | 22.000000 |
| 691.01126 | 1.0000000 | 0.016823496 | 7.0000000 | 31.000000 |
| 697.17801 | 1.0000000 | 8.9132086e-005 | 4.0000000 | 13.000000 |
| 723.17497 | 1.0000000 | 0.0006282107 | 8.0000000 | 12.000000 |
| 724.15038 | 1.0000000 | 0.00020537548 | 5.0000000 | 5.0000000 |
| 726.10876 | 1.0000000 | 0.021535098 | 6.0000000 | 16.000000 |
| 727.29248 | 1.0000000 | 6.7908516e-005 | 4.0000000 | 5.0000000 |
| 742.46876 | 1.0000000 | 0.010696461 | 4.0000000 | 22.000000 |
| 747.35261 | 1.0000000 | 0.00010999538 | 5.0000000 | 4.0000000 |
| 770.34001 | 1.0000000 | 0.018962736 | 4.0000000 | 16.000000 |
| 775.99251 | 1.0000000 | 0.015947935 | 7.0000000 | 31.000000 |
| 788.73095 | 1.0000000 | 3.3389605e-005 | 4.0000000 | 12.000000 |
| 792.74626 | 1.0000000 | 0.02263513 | 7.0000000 | 17.000000 |
| 803.86853 | 1.0000000 | 7.6363636e-006 | 5.0000000 | 5.0000000 |
| 805.57501 | 1.0000000 | 0.011329941 | 7.0000000 | 40.000000 |
| 822.51751 | 1.0000000 | 0.014710045 | 7.0000000 | 31.000000 |
| 828.26876 | 1.0000000 | 0.021425475 | 4.0000000 | 18.000000 |
| 854.74376 | 1.0000000 | 0.015504346 | 4.0000000 | 22.000000 |
| 860.29630 | 1.0000000 | 7.7651548e-005 | 8.0000000 | 4.0000000 |
| 861.82739 | 1.0000000 | 6.6157229e-005 | 4.0000000 | 4.0000000 |
| 866.46251 | 1.0000000 | 0.01449824 | 4.0000000 | 22.000000 |
| 870.49376 | 1.0000000 | 0.011177187 | 6.0000000 | 40.000000 |
| 879.15095 | 1.0000000 | 0.00010324059 | 5.0000000 | 13.000000 |
| 905.11251 | 1.0000000 | 0.014018135 | 5.0000000 | 14.000000 |
| 905.81106 | 1.0000000 | 0.00014718116 | 5.0000000 | 12.000000 |
| 930.76362 | 1.0000000 | 0.00010322105 | 7.0000000 | 5.0000000 |
| 930.79275 | 1.0000000 | 5.8463604e-005 | 4.0000000 | 5.0000000 |
| 937.41328 | 1.0000000 | 0.0003098615 | 6.0000000 | 13.000000 |
| 941.97501 | 1.0000000 | 0.012904282 | 4.0000000 | 14.000000 |
| 944.40308 | 1.0000000 | 0.00015705002 | 6.0000000 | 5.0000000 |
| 946.42501 | 1.0000000 | 0.012001155 | 7.0000000 | 40.000000 |
| 946.94554 | 1.0000000 | 8.1329738e-005 | 4.0000000 | 5.0000000 |
| 953.86126 | 1.0000000 | 0.016578605 | 4.0000000 | 31.000000 |
| 956.19146 | 1.0000000 | 0.0002852892 | 5.0000000 | 13.000000 |
| 957.54876 | 1.0000000 | 0.013643649 | 7.0000000 | 31.000000 |
| 984.69376 | 1.0000000 | 0.01281317 | 5.0000000 | 14.000000 |
| 998.71501 | 1.0000000 | 0.024487388 | 5.0000000 | 16.000000 |
| 998.74376 | 1.0000000 | 0.0113100 | 8.0000000 | 40.000000 |
| 999.14372 | 1.0000000 | 0.00011577618 | 5.0000000 | 5.0000000 |

Information                        **block number 9086**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1.4882672 | 1.0000000 | 1.1237529e-005 | 4.0000000 | 4.0000000 |
| 1.5937576 | 1.0000000 | 0.011275178 | 4.0000000 | 22.000000 |
| 22.127045 | 1.0000000 | 0.00013923432 | 7.0000000 | 12.000000 |
| 26.952508 | 1.0000000 | 0.023444017 | 6.0000000 | 17.000000 |
| 47.969888 | 1.0000000 | 5.1857951e-005 | 4.0000000 | 13.000000 |
| 48.552508 | 1.0000000 | 0.023072798 | 5.0000000 | 17.000000 |
| 65.877508 | 1.0000000 | 0.019183755 | 5.0000000 | 17.000000 |
| 66.100008 | 1.0000000 | 0.013014277 | 5.0000000 | 22.000000 |
| 66.108758 | 1.0000000 | 0.01991606 | 7.0000000 | 17.000000 |
| 76.406258 | 1.0000000 | 0.012978932 | 4.0000000 | 14.000000 |
| 82.498758 | 1.0000000 | 0.015206625 | 4.0000000 | 31.000000 |
| 85.021493 | 1.0000000 | 0.00021748863 | 7.0000000 | 12.000000 |
| 95.215008 | 1.0000000 | 0.019025078 | 5.0000000 | 16.000000 |
| 108.88728 | 1.0000000 | 7.3276289e-005 | 4.0000000 | 5.0000000 |
| 114.35906 | 1.0000000 | 8.8310872e-005 | 4.0000000 | 12.000000 |
| 114.77036 | 1.0000000 | 5.0400878e-005 | 4.0000000 | 4.0000000 |
| 126.71251 | 1.0000000 | 0.015611557 | 4.0000000 | 22.000000 |
| 132.14128 | 1.0000000 | 0.00027236874 | 5.0000000 | 5.0000000 |
| 146.99626 | 1.0000000 | 0.024960063 | 4.0000000 | 17.000000 |
| 165.08376 | 1.0000000 | 0.019388274 | 5.0000000 | 17.000000 |
| 188.23126 | 1.0000000 | 0.012924763 | 5.0000000 | 22.000000 |

| | | | | |
|---|---|---|---|---|
| 206.98051 | 1.0000000 | 0.00025809302 | 6.0000000 | 4.0000000 |
| 208.05876 | 1.0000000 | 0.019488173 | 7.0000000 | 17.000000 |
| 236.17501 | 1.0000000 | 0.015571118 | 4.0000000 | 22.000000 |
| 236.78126 | 1.0000000 | 0.020514248 | 6.0000000 | 18.000000 |
| 245.74876 | 1.0000000 | 0.01628161 | 4.0000000 | 31.000000 |
| 252.55001 | 1.0000000 | 0.016243852 | 4.0000000 | 22.000000 |
| 252.88376 | 1.0000000 | 0.02017469 | 4.0000000 | 16.000000 |
| 269.84251 | 1.0000000 | 0.017350657 | 5.0000000 | 31.000000 |
| 276.50626 | 1.0000000 | 0.016183812 | 8.0000000 | 40.000000 |
| 281.26876 | 1.0000000 | 0.016016506 | 8.0000000 | 22.000000 |
| 291.39770 | 1.0000000 | 5.5406194e-005 | 4.0000000 | 13.000000 |
| 292.62501 | 1.0000000 | 0.016211879 | 4.0000000 | 40.000000 |
| 302.79784 | 1.0000000 | 8.1147494e-005 | 5.0000000 | 13.000000 |
| 303.23279 | 1.0000000 | 0.0019863723 | 8.0000000 | 5.0000000 |
| 318.63607 | 1.0000000 | 0.00034077871 | 5.0000000 | 5.0000000 |
| 366.59582 | 1.0000000 | 0.00019764548 | 6.0000000 | 5.0000000 |
| 369.68985 | 1.0000000 | 0.00021877317 | 5.0000000 | 5.0000000 |
| 396.96876 | 1.0000000 | 0.015140175 | 7.0000000 | 22.000000 |
| 423.28339 | 1.0000000 | 3.7434016e-005 | 4.0000000 | 5.0000000 |
| 440.98502 | 1.0000000 | 2.0825412e-005 | 4.0000000 | 5.0000000 |
| 448.53978 | 1.0000000 | 7.2934757e-005 | 7.0000000 | 5.0000000 |
| 454.60251 | 1.0000000 | 0.020224208 | 7.0000000 | 16.000000 |
| 465.74867 | 1.0000000 | 9.6922040e-005 | 4.0000000 | 5.0000000 |
| 467.43811 | 1.0000000 | 0.00022218714 | 5.0000000 | 5.0000000 |
| 472.84251 | 1.0000000 | 0.017367761 | 4.0000000 | 31.000000 |
| 501.76872 | 1.0000000 | 2.2183885e-005 | 4.0000000 | 4.0000000 |
| 508.13376 | 1.0000000 | 0.021223103 | 7.0000000 | 17.000000 |
| 513.38209 | 1.0000000 | 2.6016280e-005 | 4.0000000 | 5.0000000 |
| 515.35456 | 1.0000000 | 7.8635233e-005 | 4.0000000 | 13.000000 |
| 530.34061 | 1.0000000 | 7.7339028 | 6.0000000 | 5.0000000 |
| 530.34155 | 1.0000000 | 9.7192155 | 8.0000000 | 13.000000 |
| 530.34379 | 1.0000000 | 8.7357848 | 4.0000000 | 40.000000 |
| 541.51501 | 1.0000000 | 0.020349738 | 4.0000000 | 16.000000 |
| 547.31294 | 1.0000000 | 2.6361644e-005 | 4.0000000 | 5.0000000 |
| 578.89251 | 1.0000000 | 0.013464574 | 5.0000000 | 31.000000 |
| 584.05876 | 1.0000000 | 0.019809538 | 5.0000000 | 16.000000 |
| 584.41251 | 1.0000000 | 0.016867078 | 5.0000000 | 14.000000 |
| 586.73955 | 1.0000000 | 0.00018763823 | 7.0000000 | 4.0000000 |
| 587.23998 | 1.0000000 | 7.0479056e-005 | 4.0000000 | 5.0000000 |
| 589.22133 | 1.0000000 | 3.1044167e-005 | 4.0000000 | 4.0000000 |
| 608.89797 | 1.0000000 | 7.3116424e-005 | 4.0000000 | 4.0000000 |
| 626.63163 | 1.0000000 | 7.1289393e-005 | 4.0000000 | 5.0000000 |
| 627.07751 | 1.0000000 | 0.023921585 | 4.0000000 | 17.000000 |
| 628.25209 | 1.0000000 | 4.9853383e-005 | 4.0000000 | 5.0000000 |
| 628.97689 | 1.0000000 | 0.0003226059 | 6.0000000 | 4.0000000 |
| 636.83759 | 1.0000000 | 8.1276790e-005 | 4.0000000 | 13.000000 |
| 642.42501 | 1.0000000 | 0.024439297 | 4.0000000 | 18.000000 |
| 649.31070 | 1.0000000 | 4.7394412e-005 | 4.0000000 | 4.0000000 |
| 662.52751 | 1.0000000 | 0.024885328 | 4.0000000 | 16.000000 |
| 690.42274 | 1.0000000 | 0.00028683417 | 5.0000000 | 4.0000000 |
| 705.33348 | 1.0000000 | 0.00020321168 | 7.0000000 | 5.0000000 |
| 706.60501 | 1.0000000 | 0.012659853 | 4.0000000 | 31.000000 |
| 721.88126 | 1.0000000 | 0.0118153 | 7.0000000 | 40.000000 |
| 761.73751 | 1.0000000 | 0.015176328 | 5.0000000 | 14.000000 |
| 764.97126 | 1.0000000 | 0.022282601 | 8.0000000 | 16.000000 |
| 783.19001 | 1.0000000 | 0.023902392 | 6.0000000 | 16.000000 |
| 788.41215 | 1.0000000 | 4.6628975e-005 | 4.0000000 | 5.0000000 |
| 799.10001 | 1.0000000 | 0.011863807 | 4.0000000 | 22.000000 |
| 816.59376 | 1.0000000 | 0.011899344 | 4.0000000 | 40.000000 |
| 824.31319 | 1.0000000 | 9.1213772e-005 | 7.0000000 | 5.0000000 |
| 830.07599 | 1.0000000 | 0.00014422374 | 5.0000000 | 4.0000000 |
| 833.58024 | 1.0000000 | 0.00013169068 | 5.0000000 | 5.0000000 |
| 861.70251 | 1.0000000 | 0.021721326 | 4.0000000 | 17.000000 |
| 864.05001 | 1.0000000 | 0.013596812 | 4.0000000 | 40.000000 |
| 895.22182 | 1.0000000 | 6.4610565e-005 | 7.0000000 | 5.0000000 |
| 895.97126 | 1.0000000 | 0.02434128 | 4.0000000 | 16.000000 |
| 925.60626 | 1.0000000 | 0.020801608 | 5.0000000 | 18.000000 |
| 926.82808 | 1.0000000 | 1.8051588e-005 | 4.0000000 | 5.0000000 |
| 938.58168 | 1.0000000 | 5.6622550e-005 | 4.0000000 | 5.0000000 |
| 943.87146 | 1.0000000 | 5.7638167e-005 | 4.0000000 | 5.0000000 |
| 952.87806 | 1.0000000 | 0.00022885764 | 5.0000000 | 5.0000000 |
| 975.26501 | 1.0000000 | 0.022878166 | 7.0000000 | 17.000000 |

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 979.45251 | 1.0000000 | 0.020854658 | 4.0000000 | 17.000000 |
| 984.12501 | 1.0000000 | 0.013567707 | 7.0000000 | 40.000000 |

Information **block number 11085**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 971.25626 | 1.0000000 | 0.016582431 | 6.0000000 | 18.000000 |
| 973.32285 | 1.0000000 | 9.3205847e-005 | 4.0000000 | 12.000000 |
| 974.16876 | 1.0000000 | 0.0099114921 | 4.0000000 | 40.000000 |
| 977.74135 | 1.0000000 | 2.2520178e-005 | 7.0000000 | 4.0000000 |

Information **block number 15600**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 14.606805 | 1.0000000 | 3.0761535e-005 | 4.0000000 | 19.000000 |
| 25.902991 | 1.0000000 | 0.0025358652 | 8.0000000 | 20.000000 |
| 33.791258 | 1.0000000 | 0.023771451 | 7.0000000 | 40.000000 |
| 57.041385 | 1.0000000 | 0.00011484086 | 4.0000000 | 21.000000 |
| 63.593758 | 1.0000000 | 0.023810347 | 5.0000000 | 4.0000000 |
| 64.168439 | 1.0000000 | 0.00078944625 | 8.0000000 | 21.000000 |
| 72.176258 | 1.0000000 | 0.011967891 | 4.0000000 | 5.0000000 |
| 77.417277 | 1.0000000 | 4.8151613e-005 | 4.0000000 | 19.000000 |
| 87.701258 | 1.0000000 | 0.0079112923 | 6.0000000 | 5.0000000 |
| 96.920008 | 1.0000000 | 0.022175892 | 4.0000000 | 22.000000 |
| 102.70760 | 1.0000000 | 8.3970634e-005 | 4.0000000 | 21.000000 |
| 104.26876 | 1.0000000 | 0.020609258 | 6.0000000 | 4.0000000 |
| 106.20686 | 1.0000000 | 5.5141017e-005 | 4.0000000 | 19.000000 |
| 116.72126 | 1.0000000 | 0.023084471 | 5.0000000 | 31.000000 |
| 131.70069 | 1.0000000 | 0.00021822905 | 7.0000000 | 21.000000 |
| 155.28662 | 1.0000000 | 1.8912380e-005 | 4.0000000 | 21.000000 |
| 163.25668 | 1.0000000 | 0.00032636294 | 6.0000000 | 19.000000 |
| 167.53709 | 1.0000000 | 0.0010576991 | 8.0000000 | 21.000000 |
| 174.61156 | 1.0000000 | 0.00027010744 | 7.0000000 | 20.000000 |
| 177.10755 | 1.0000000 | 9.8273509e-005 | 5.0000000 | 20.000000 |
| 219.06659 | 1.0000000 | 0.00065775118 | 8.0000000 | 20.000000 |
| 221.73126 | 1.0000000 | 0.021387794 | 7.0000000 | 4.0000000 |
| 232.68126 | 1.0000000 | 0.022710295 | 5.0000000 | 4.0000000 |
| 235.98126 | 1.0000000 | 0.023700439 | 4.0000000 | 4.0000000 |
| 252.46328 | 1.0000000 | 1.1256833e-005 | 4.0000000 | 20.000000 |
| 265.61170 | 1.0000000 | 3.3222917e-005 | 4.0000000 | 19.000000 |
| 276.55657 | 1.0000000 | 0.0021628 | 8.0000000 | 20.000000 |
| 277.26626 | 1.0000000 | 0.028630894 | 7.0000000 | 40.000000 |
| 280.58723 | 1.0000000 | 4.7573658e-005 | 4.0000000 | 21.000000 |
| 293.81876 | 1.0000000 | 0.019980463 | 4.0000000 | 4.0000000 |
| 303.49371 | 1.0000000 | 6.1402802e-005 | 5.0000000 | 18.000000 |
| 321.81217 | 1.0000000 | 5.1446777e-005 | 4.0000000 | 20.000000 |
| 341.42861 | 1.0000000 | 5.9835285e-005 | 4.0000000 | 19.000000 |
| 369.94211 | 1.0000000 | 0.00017868906 | 5.0000000 | 19.000000 |
| 390.62237 | 1.0000000 | 6.3591088e-005 | 4.0000000 | 19.000000 |
| 422.36135 | 1.0000000 | 0.00030709516 | 6.0000000 | 20.000000 |
| 429.95626 | 1.0000000 | 0.018945234 | 6.0000000 | 4.0000000 |
| 433.38469 | 1.0000000 | 3.5700037e-005 | 4.0000000 | 18.000000 |
| 443.33251 | 1.0000000 | 0.024751208 | 4.0000000 | 22.000000 |
| 459.23876 | 1.0000000 | 0.022696257 | 6.0000000 | 22.000000 |
| 459.70626 | 1.0000000 | 0.01942737 | 5.0000000 | 4.0000000 |
| 481.52626 | 1.0000000 | 0.013171441 | 5.0000000 | 5.0000000 |
| 482.42957 | 1.0000000 | 0.0023914602 | 8.0000000 | 20.000000 |
| 501.38497 | 1.0000000 | 0.0002541669 | 5.0000000 | 19.000000 |
| 518.63175 | 1.0000000 | 0.00035027472 | 7.0000000 | 21.000000 |
| 529.89683 | 1.0000000 | 1.0909091e-005 | 5.0000000 | 19.000000 |
| 542.07682 | 1.0000000 | 7.3134462e-005 | 4.0000000 | 19.000000 |
| 546.27461 | 1.0000000 | 0.00030767583 | 5.0000000 | 20.000000 |
| 548.72251 | 1.0000000 | 0.028388084 | 4.0000000 | 40.000000 |
| 549.17126 | 1.0000000 | 0.02529337 | 4.0000000 | 31.000000 |
| 550.78126 | 1.0000000 | 0.020331328 | 5.0000000 | 4.0000000 |
| 563.82001 | 1.0000000 | 0.024300892 | 4.0000000 | 22.000000 |
| 578.24907 | 1.0000000 | 0.00096218604 | 8.0000000 | 21.000000 |
| 582.64802 | 1.0000000 | 0.00010789539 | 4.0000000 | 19.000000 |
| 588.26876 | 1.0000000 | 0.020972592 | 5.0000000 | 4.0000000 |
| 598.04092 | 1.0000000 | 0.00020908281 | 7.0000000 | 20.000000 |
| 621.00751 | 1.0000000 | 0.0075805429 | 4.0000000 | 5.0000000 |
| 628.98876 | 1.0000000 | 0.023610174 | 4.0000000 | 22.000000 |

187

| | | | | |
|---|---|---|---|---|
| 652.84626 | 1.0000000 | 0.02465153 | 4.0000000 | 31.000000 |
| 671.33830 | 1.0000000 | 0.0003104488 | 5.0000000 | 20.000000 |
| 681.25680 | 1.0000000 | 0.00025848903 | 5.0000000 | 19.000000 |
| 698.26891 | 1.0000000 | 8.5884648e-005 | 5.0000000 | 19.000000 |
| 717.39296 | 1.0000000 | 1.3403033e-005 | 4.0000000 | 21.000000 |
| 723.24944 | 1.0000000 | 2.7084539e-005 | 4.0000000 | 19.000000 |
| 724.47010 | 1.0000000 | 5.1879957e-005 | 5.0000000 | 19.000000 |
| 728.89579 | 1.0000000 | 0.000102267 | 4.0000000 | 20.000000 |
| 730.41741 | 1.0000000 | 0.00078207961 | 8.0000000 | 20.000000 |
| 734.36652 | 1.0000000 | 0.0002889686 | 7.0000000 | 21.000000 |
| 751.74501 | 1.0000000 | 0.023869611 | 6.0000000 | 22.000000 |
| 751.92412 | 1.0000000 | 9.2899172e-005 | 4.0000000 | 21.000000 |
| 762.96113 | 1.0000000 | 1.0909091e-005 | 4.0000000 | 20.000000 |
| 763.75522 | 1.0000000 | 0.00019129486 | 5.0000000 | 21.000000 |
| 771.18251 | 1.0000000 | 0.022958701 | 7.0000000 | 22.000000 |
| 776.87501 | 1.0000000 | 0.020199558 | 5.0000000 | 4.0000000 |
| 800.72501 | 1.0000000 | 0.023716917 | 6.0000000 | 4.0000000 |
| 801.15248 | 1.0000000 | 0.00014844649 | 6.0000000 | 19.000000 |
| 847.89195 | 1.0000000 | 0.00022381992 | 5.0000000 | 19.000000 |
| 871.49180 | 1.0000000 | 4.5005600e-005 | 4.0000000 | 19.000000 |
| 909.53071 | 1.0000000 | 6.6916577e-005 | 4.0000000 | 20.000000 |
| 914.32900 | 1.0000000 | 3.6869779e-005 | 4.0000000 | 21.000000 |
| 914.90608 | 1.0000000 | 0.00015622982 | 5.0000000 | 21.000000 |
| 925.67407 | 1.0000000 | 0.00064701156 | 8.0000000 | 20.000000 |
| 928.99696 | 1.0000000 | 0.00027835636 | 5.0000000 | 19.000000 |
| 945.89376 | 1.0000000 | 0.023366105 | 8.0000000 | 4.0000000 |
| 954.00001 | 1.0000000 | 0.02310215 | 5.0000000 | 4.0000000 |
| 961.76096 | 1.0000000 | 0.0003989312 | 6.0000000 | 18.000000 |
| 964.39501 | 1.0000000 | 0.0093833581 | 7.0000000 | 5.0000000 |
| 975.61047 | 1.0000000 | 0.00028311362 | 7.0000000 | 21.000000 |
| 993.19180 | 1.0000000 | 0.0002490125 | 5.0000000 | 21.000000 |
| 996.68459 | 1.0000000 | 7.3990530e-005 | 4.0000000 | 18.000000 |
| 996.72501 | 1.0000000 | 0.00020739931 | 5.0000000 | 21.000000 |

Information
Input Parameters:  **block number 17386**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.74626 | 1.0000000 | 0.027113182 | 6.0000000 | 18.000000 |
| 949.97126 | 1.0000000 | 0.02305387 | 7.0000000 | 18.000000 |
| 962.29883 | 1.0000000 | 6.0191390e-005 | 4.0000000 | 14.000000 |
| 966.39001 | 1.0000000 | 0.022182362 | 5.0000000 | 18.000000 |
| 978.19126 | 1.0000000 | 0.023187936 | 4.0000000 | 22.000000 |
| 999.09626 | 1.0000000 | 0.0098599719 | 4.0000000 | 5.0000000 |

Information
Input Parameters:  **block number 17880**

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3312576 | 1.0000000 | 0.013660563 | 4.0000000 | 40.000000 |
| 10.212508 | 1.0000000 | 0.024783295 | 7.0000000 | 22.000000 |
| 23.325008 | 1.0000000 | 0.0088078356 | 4.0000000 | 40.000000 |
| 30.530008 | 1.0000000 | 0.013138131 | 4.0000000 | 31.000000 |
| 33.371518 | 1.0000000 | 5.5208983e-005 | 4.0000000 | 5.0000000 |
| 39.843758 | 1.0000000 | 0.010930011 | 4.0000000 | 40.000000 |
| 50.468758 | 1.0000000 | 0.024185992 | 7.0000000 | 22.000000 |
| 51.480286 | 1.0000000 | 7.6195078e-005 | 4.0000000 | 12.000000 |
| 71.450904 | 1.0000000 | 0.00022481282 | 6.0000000 | 5.0000000 |
| 74.337508 | 1.0000000 | 0.011699903 | 4.0000000 | 18.000000 |
| 77.207632 | 1.0000000 | 0.00021953462 | 6.0000000 | 5.0000000 |
| 81.331258 | 1.0000000 | 0.0099835877 | 4.0000000 | 40.000000 |
| 96.092508 | 1.0000000 | 0.011083225 | 4.0000000 | 31.000000 |
| 110.71847 | 1.0000000 | 6.4537646e-005 | 4.0000000 | 5.0000000 |
| 120.53001 | 1.0000000 | 0.0088973526 | 5.0000000 | 31.000000 |
| 121.40501 | 1.0000000 | 0.0093916721 | 4.0000000 | 31.000000 |
| 122.98366 | 1.0000000 | 0.0012000745 | 8.0000000 | 12.000000 |
| 133.48626 | 1.0000000 | 0.01459633 | 5.0000000 | 31.000000 |
| 143.53626 | 1.0000000 | 0.014501098 | 4.0000000 | 31.000000 |
| 146.68126 | 1.0000000 | 0.010310124 | 7.0000000 | 40.000000 |
| 176.58495 | 1.0000000 | 0.00011576049 | 5.0000000 | 12.000000 |
| 177.63626 | 1.0000000 | 0.011563379 | 7.0000000 | 31.000000 |
| 186.66251 | 1.0000000 | 0.015210378 | 4.0000000 | 18.000000 |
| 187.22168 | 1.0000000 | 1.0909091e-005 | 4.0000000 | 4.0000000 |
| 195.56251 | 1.0000000 | 0.012304253 | 4.0000000 | 18.000000 |

| | | | | |
|---|---|---|---|---|
| 198.48317 | 1.0000000 | 5.6737231e-005 | 4.0000000 | 12.000000 |
| 198.51720 | 1.0000000 | 0.00018638548 | 6.0000000 | 5.0000000 |
| 229.78001 | 1.0000000 | 0.014536803 | 8.0000000 | 31.000000 |
| 238.35501 | 1.0000000 | 0.013503305 | 4.0000000 | 31.000000 |
| 258.61876 | 1.0000000 | 0.013974516 | 5.0000000 | 18.000000 |
| 261.39376 | 1.0000000 | 0.0090324926 | 4.0000000 | 40.000000 |
| 269.09376 | 1.0000000 | 0.020258758 | 5.0000000 | 22.000000 |
| 271.26251 | 1.0000000 | 0.0082754269 | 6.0000000 | 40.000000 |
| 276.67968 | 1.0000000 | 5.0009485e-005 | 4.0000000 | 4.0000000 |
| 294.98751 | 1.0000000 | 0.021073575 | 8.0000000 | 22.000000 |
| 314.16126 | 1.0000000 | 0.010563013 | 4.0000000 | 31.000000 |
| 314.98001 | 1.0000000 | 0.013691477 | 7.0000000 | 31.000000 |
| 319.25001 | 1.0000000 | 0.0085824493 | 4.0000000 | 40.000000 |
| 321.42501 | 1.0000000 | 0.0097396292 | 4.0000000 | 40.000000 |
| 328.30626 | 1.0000000 | 0.024724301 | 4.0000000 | 22.000000 |
| 340.99376 | 1.0000000 | 0.020513609 | 6.0000000 | 22.000000 |
| 354.23751 | 1.0000000 | 0.019690434 | 4.0000000 | 22.000000 |
| 384.99376 | 1.0000000 | 0.020903898 | 4.0000000 | 22.000000 |
| 395.51876 | 1.0000000 | 0.012660424 | 7.0000000 | 40.000000 |
| 399.17413 | 1.0000000 | 0.00014029956 | 5.0000000 | 4.0000000 |
| 412.56251 | 1.0000000 | 0.011947286 | 8.0000000 | 40.000000 |
| 414.60626 | 1.0000000 | 0.0081204038 | 4.0000000 | 40.000000 |
| 425.13310 | 1.0000000 | 6.4418324e-005 | 4.0000000 | 13.000000 |
| 437.18126 | 1.0000000 | 0.024821515 | 4.0000000 | 22.000000 |
| 441.03126 | 1.0000000 | 0.011356698 | 6.0000000 | 40.000000 |
| 456.63126 | 1.0000000 | 0.010936728 | 4.0000000 | 40.000000 |
| 464.78001 | 1.0000000 | 0.01032381 | 6.0000000 | 31.000000 |
| 466.47006 | 1.0000000 | 1.3559718e-005 | 4.0000000 | 4.0000000 |
| 513.88751 | 1.0000000 | 0.0088376157 | 5.0000000 | 40.000000 |
| 536.74830 | 1.0000000 | 0.00013275271 | 7.0000000 | 5.0000000 |
| 537.03001 | 1.0000000 | 0.01255086 | 4.0000000 | 31.000000 |
| 557.44251 | 1.0000000 | 0.012903291 | 5.0000000 | 31.000000 |
| 573.58582 | 1.0000000 | 0.00045203744 | 7.0000000 | 12.000000 |
| 573.75410 | 1.0000000 | 1.5662954e-005 | 4.0000000 | 12.000000 |
| 601.96876 | 1.0000000 | 0.019939701 | 5.0000000 | 22.000000 |
| 609.28126 | 1.0000000 | 0.022841453 | 5.0000000 | 22.000000 |
| 613.24637 | 1.0000000 | 7.1933540e-005 | 4.0000000 | 5.0000000 |
| 616.70060 | 1.0000000 | 7.6363636e-006 | 5.0000000 | 5.0000000 |
| 664.02501 | 1.0000000 | 0.008281996 | 4.0000000 | 40.000000 |
| 671.86251 | 1.0000000 | 0.0087714766 | 4.0000000 | 40.000000 |
| 675.18126 | 1.0000000 | 0.017065586 | 7.0000000 | 18.000000 |
| 692.57906 | 1.0000000 | 6.5343174e-005 | 4.0000000 | 12.000000 |
| 700.95001 | 1.0000000 | 0.0099277449 | 5.0000000 | 40.000000 |
| 712.83001 | 1.0000000 | 0.0096117967 | 6.0000000 | 31.000000 |
| 715.39251 | 1.0000000 | 0.0087835623 | 5.0000000 | 31.000000 |
| 727.11759 | 1.0000000 | 0.00029853095 | 4.0000000 | 12.000000 |
| 746.93126 | 1.0000000 | 0.023933222 | 4.0000000 | 22.000000 |
| 747.30626 | 1.0000000 | 0.020704865 | 6.0000000 | 22.000000 |
| 747.95626 | 1.0000000 | 0.013428438 | 6.0000000 | 40.000000 |
| 778.63810 | 1.0000000 | 7.9841310e-005 | 4.0000000 | 4.0000000 |
| 780.76126 | 1.0000000 | 0.011369586 | 4.0000000 | 31.000000 |
| 790.41876 | 1.0000000 | 0.022595717 | 7.0000000 | 22.000000 |
| 795.93626 | 1.0000000 | 0.013805411 | 7.0000000 | 31.000000 |
| 797.66536 | 1.0000000 | 0.00017224545 | 6.0000000 | 5.0000000 |
| 804.56876 | 1.0000000 | 0.020159083 | 4.0000000 | 22.000000 |
| 809.34876 | 1.0000000 | 0.0087594565 | 6.0000000 | 31.000000 |
| 813.46876 | 1.0000000 | 0.01539137 | 8.0000000 | 18.000000 |
| 819.10501 | 1.0000000 | 0.010840034 | 4.0000000 | 31.000000 |
| 820.36209 | 1.0000000 | 7.6363636e-006 | 4.0000000 | 4.0000000 |
| 820.42272 | 1.0000000 | 0.00049346689 | 6.0000000 | 12.000000 |
| 820.46126 | 1.0000000 | 0.012052694 | 6.0000000 | 31.000000 |
| 826.23126 | 1.0000000 | 0.014706135 | 4.0000000 | 18.000000 |
| 869.30389 | 1.0000000 | 0.00025608507 | 5.0000000 | 5.0000000 |
| 881.26251 | 1.0000000 | 0.0091184662 | 6.0000000 | 40.000000 |
| 887.39716 | 1.0000000 | 0.0001153475 | 5.0000000 | 5.0000000 |
| 923.42659 | 1.0000000 | 0.00031553414 | 5.0000000 | 13.000000 |
| 926.22300 | 1.0000000 | 2.6580178e-005 | 7.0000000 | 5.0000000 |
| 965.27376 | 1.0000000 | 0.014745477 | 7.0000000 | 31.000000 |
| 984.01645 | 1.0000000 | 0.00022947611 | 5.0000000 | 4.0000000 |
| 985.27501 | 1.0000000 | 0.022691202 | 5.0000000 | 22.000000 |

Information           **block number 26376**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 943.26251 | 1.0000000 | 0.034359887 | 4.0000000 | 40.000000 |
| 945.75376 | 1.0000000 | 0.034617182 | 4.0000000 | 22.000000 |
| 949.98501 | 1.0000000 | 0.03680787 | 6.0000000 | 22.000000 |
| 962.29903 | 1.0000000 | 0.00025917755 | 4.0000000 | 10.000000 |
| 966.40376 | 1.0000000 | 0.035936362 | 4.0000000 | 22.000000 |
| 978.20501 | 1.0000000 | 0.036941936 | 4.0000000 | 31.000000 |
| 999.08676 | 1.0000000 | 0.00036480253 | 6.0000000 | 7.0000000 |
| 999.08695 | 1.0000000 | 0.00055281421 | 7.0000000 | 7.0000000 |

Information           **block number 38893**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.86001 | 1.0000000 | 0.013787955 | 4.0000000 | 26.000000 |
| 951.13626 | 1.0000000 | 0.011447237 | 5.0000000 | 27.000000 |

Information           **block number 43037**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 730.66501 | 1.0000000 | 0.014697005 | 5.0000000 | 4.0000000 |
| 740.82589 | 1.0000000 | 0.000151446 | 5.0000000 | 28.000000 |
| 758.57137 | 1.0000000 | 1.0909091e-005 | 7.0000000 | 29.000000 |
| 764.28501 | 1.0000000 | 0.041227599 | 4.0000000 | 40.000000 |
| 769.28501 | 1.0000000 | 0.011579876 | 5.0000000 | 5.0000000 |
| 773.82801 | 1.0000000 | 0.00018705505 | 5.0000000 | 22.000000 |
| 774.14332 | 1.0000000 | 0.00014265855 | 5.0000000 | 28.000000 |
| 797.17564 | 1.0000000 | 1.3327146e-005 | 4.0000000 | 22.000000 |
| 823.16884 | 1.0000000 | 4.1349191e-005 | 7.0000000 | 28.000000 |
| 824.17063 | 1.0000000 | 0.00085859388 | 8.0000000 | 29.000000 |
| 828.83616 | 1.0000000 | 2.7845479e-005 | 7.0000000 | 27.000000 |
| 829.62687 | 1.0000000 | 8.4570213e-005 | 4.0000000 | 28.000000 |
| 829.92405 | 1.0000000 | 0.00040018177 | 6.0000000 | 27.000000 |
| 843.52470 | 1.0000000 | 4.6189065e-005 | 4.0000000 | 29.000000 |
| 844.47520 | 1.0000000 | 0.00010687206 | 5.0000000 | 29.000000 |
| 860.06251 | 1.0000000 | 0.012204692 | 4.0000000 | 23.000000 |
| 869.78937 | 1.0000000 | 0.0002782081 | 6.0000000 | 22.000000 |
| 878.33825 | 1.0000000 | 0.00032717487 | 6.0000000 | 26.000000 |
| 879.21589 | 1.0000000 | 7.8317677e-005 | 5.0000000 | 27.000000 |
| 911.75593 | 1.0000000 | 0.00032463804 | 6.0000000 | 25.000000 |
| 925.44126 | 1.0000000 | 0.010276098 | 7.0000000 | 5.0000000 |
| 938.75876 | 1.0000000 | 0.024244853 | 4.0000000 | 31.000000 |
| 948.18421 | 1.0000000 | 0.00034390275 | 7.0000000 | 22.000000 |
| 976.82796 | 1.0000000 | 0.0002312424 | 7.0000000 | 30.000000 |
| 995.51001 | 1.0000000 | 0.040035402 | 8.0000000 | 40.000000 |

Information           **block number 58438**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 12.648779 | 1.0000000 | 4.8693263e-005 | 4.0000000 | 37.000000 |
| 23.606258 | 1.0000000 | 0.012861629 | 4.0000000 | 33.000000 |
| 36.631258 | 1.0000000 | 0.013589287 | 7.0000000 | 32.000000 |
| 67.676258 | 1.0000000 | 0.010182809 | 4.0000000 | 5.0000000 |
| 86.778771 | 1.0000000 | 0.00023759739 | 5.0000000 | 38.000000 |
| 90.606258 | 1.0000000 | 0.016387474 | 4.0000000 | 33.000000 |
| 114.04738 | 1.0000000 | 0.00012017554 | 6.0000000 | 35.000000 |
| 135.14701 | 1.0000000 | 5.2603196e-005 | 4.0000000 | 34.000000 |
| 146.91376 | 1.0000000 | 0.0091892433 | 4.0000000 | 5.0000000 |
| 155.51286 | 1.0000000 | 0.00011893185 | 5.0000000 | 39.000000 |
| 157.24438 | 1.0000000 | 6.3003409e-005 | 4.0000000 | 37.000000 |
| 170.26876 | 1.0000000 | 0.014505365 | 6.0000000 | 32.000000 |
| 187.33126 | 1.0000000 | 0.010309015 | 4.0000000 | 4.0000000 |
| 203.36815 | 1.0000000 | 0.00022897118 | 7.0000000 | 36.000000 |
| 204.34001 | 1.0000000 | 0.025775842 | 4.0000000 | 22.000000 |
| 207.78202 | 1.0000000 | 0.00022497159 | 7.0000000 | 35.000000 |
| 224.35761 | 1.0000000 | 7.2648109e-005 | 4.0000000 | 35.000000 |
| 225.79376 | 1.0000000 | 0.013041937 | 8.0000000 | 33.000000 |
| 229.93873 | 1.0000000 | 0.00027297188 | 7.0000000 | 36.000000 |
| 245.36278 | 1.0000000 | 6.7579412e-005 | 4.0000000 | 36.000000 |
| 262.40342 | 1.0000000 | 0.00031687817 | 5.0000000 | 37.000000 |
| 268.25607 | 1.0000000 | 4.6827832e-005 | 4.0000000 | 37.000000 |

190

| | | | | |
|---|---|---|---|---|
| 299.12626 | 1.0000000 | 0.011374908 | 5.0000000 | 5.0000000 |
| 303.76876 | 1.0000000 | 0.012074037 | 5.0000000 | 33.000000 |
| 307.03558 | 1.0000000 | 0.00019575456 | 5.0000000 | 35.000000 |
| 311.30001 | 1.0000000 | 0.014066173 | 5.0000000 | 32.000000 |
| 334.67828 | 1.0000000 | 0.00035587797 | 6.0000000 | 37.000000 |
| 356.51732 | 1.0000000 | 5.7235712e-005 | 4.0000000 | 37.000000 |
| 358.55001 | 1.0000000 | 0.016494595 | 4.0000000 | 32.000000 |
| 382.82945 | 1.0000000 | 5.3540825e-005 | 4.0000000 | 37.000000 |
| 389.25876 | 1.0000000 | 0.027476294 | 5.0000000 | 22.000000 |
| 393.61876 | 1.0000000 | 0.01565747 | 4.0000000 | 33.000000 |
| 408.39943 | 1.0000000 | 4.9123912e-005 | 4.0000000 | 34.000000 |
| 427.98971 | 1.0000000 | 9.2307135e-005 | 4.0000000 | 31.000000 |
| 439.68113 | 1.0000000 | 0.00018918981 | 7.0000000 | 39.000000 |
| 451.60650 | 1.0000000 | 0.01203648 | 4.0000000 | 4.0000000 |
| 451.77340 | 1.0000000 | 0.00078203026 | 8.0000000 | 31.000000 |
| 455.17267 | 1.0000000 | 0.00024101533 | 5.0000000 | 31.000000 |
| 455.55751 | 1.0000000 | 0.022806881 | 4.0000000 | 18.000000 |
| 462.18359 | 1.0000000 | 3.9051009e-005 | 4.0000000 | 31.000000 |
| 464.75951 | 1.0000000 | 0.00011357286 | 5.0000000 | 34.000000 |
| 477.41351 | 1.0000000 | 2.2920272e-005 | 4.0000000 | 36.000000 |
| 503.72705 | 1.0000000 | 4.9333856e-005 | 4.0000000 | 31.000000 |
| 503.77907 | 1.0000000 | 5.7676571e-005 | 4.0000000 | 36.000000 |
| 511.63250 | 1.0000000 | 0.00084268144 | 8.0000000 | 31.000000 |
| 526.72611 | 1.0000000 | 0.00021107929 | 5.0000000 | 37.000000 |
| 531.06501 | 1.0000000 | 0.027436014 | 4.0000000 | 22.000000 |
| 540.73751 | 1.0000000 | 0.013365174 | 4.0000000 | 32.000000 |
| 557.60713 | 1.0000000 | 0.00022935277 | 6.0000000 | 38.000000 |
| 564.02250 | 1.0000000 | 4.9351094e-005 | 4.0000000 | 37.000000 |
| 565.40775 | 1.0000000 | 3.8488428e-005 | 4.0000000 | 38.000000 |
| 565.95001 | 1.0000000 | 0.011989743 | 6.0000000 | 33.000000 |
| 566.80530 | 1.0000000 | 3.8571227e-005 | 4.0000000 | 37.000000 |
| 576.78876 | 1.0000000 | 0.010656433 | 4.0000000 | 5.0000000 |
| 596.22126 | 1.0000000 | 0.024540818 | 8.0000000 | 22.000000 |
| 609.88412 | 1.0000000 | 8.8192073e-005 | 5.0000000 | 39.000000 |
| 613.54839 | 1.0000000 | 0.00011731507 | 5.0000000 | 35.000000 |
| 616.76091 | 1.0000000 | 6.6999422e-005 | 4.0000000 | 37.000000 |
| 626.90286 | 1.0000000 | 7.4789639e-005 | 4.0000000 | 35.000000 |
| 638.31691 | 1.0000000 | 6.3144998e-005 | 4.0000000 | 35.000000 |
| 645.44376 | 1.0000000 | 0.016374789 | 6.0000000 | 33.000000 |
| 709.59703 | 1.0000000 | 6.0184352e-005 | 5.0000000 | 35.000000 |
| 715.33883 | 1.0000000 | 0.00019945625 | 5.0000000 | 35.000000 |
| 718.01251 | 1.0000000 | 0.014172386 | 4.0000000 | 32.000000 |
| 729.70001 | 1.0000000 | 0.015047066 | 4.0000000 | 32.000000 |
| 740.60931 | 1.0000000 | 0.00012313047 | 5.0000000 | 38.000000 |
| 745.87501 | 1.0000000 | 0.011350565 | 5.0000000 | 33.000000 |
| 750.65106 | 1.0000000 | 0.0013494785 | 8.0000000 | 37.000000 |
| 761.24001 | 1.0000000 | 0.023791347 | 5.0000000 | 22.000000 |
| 763.45112 | 1.0000000 | 0.00019898023 | 6.0000000 | 37.000000 |
| 769.07765 | 1.0000000 | 0.00018200877 | 5.0000000 | 35.000000 |
| 777.16728 | 1.0000000 | 0.00025994857 | 6.0000000 | 35.000000 |
| 781.08049 | 1.0000000 | 0.00023753069 | 6.0000000 | 39.000000 |
| 784.74758 | 1.0000000 | 6.3296136e-005 | 4.0000000 | 36.000000 |
| 816.71251 | 1.0000000 | 0.016647137 | 5.0000000 | 32.000000 |
| 822.23377 | 1.0000000 | 1.0909091e-005 | 6.0000000 | 34.000000 |
| 836.53876 | 1.0000000 | 0.023512164 | 7.0000000 | 18.000000 |
| 840.46251 | 1.0000000 | 0.013351667 | 5.0000000 | 4.0000000 |
| 851.85350 | 1.0000000 | 3.8520385e-005 | 4.0000000 | 31.000000 |
| 856.24702 | 1.0000000 | 6.2533618e-005 | 4.0000000 | 39.000000 |
| 865.73126 | 1.0000000 | 0.0083223611 | 7.0000000 | 4.0000000 |
| 877.69001 | 1.0000000 | 0.028028358 | 4.0000000 | 22.000000 |
| 878.13581 | 1.0000000 | 9.4547780e-005 | 4.0000000 | 37.000000 |
| 886.78296 | 1.0000000 | 0.00025493615 | 6.0000000 | 39.000000 |
| 912.10246 | 1.0000000 | 0.00014156236 | 6.0000000 | 39.000000 |
| 936.83003 | 1.0000000 | 0.00037902543 | 6.0000000 | 37.000000 |
| 940.26376 | 1.0000000 | 0.025545335 | 5.0000000 | 18.000000 |
| 955.96251 | 1.0000000 | 0.011147519 | 4.0000000 | 4.0000000 |
| 991.96633 | 1.0000000 | 1.0909091e-005 | 8.0000000 | 35.000000 |

Information
Input Parameters:

block number 69342

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3387576 | 1.0000000 | 0.021160563 | 6.0000000 | 47.000000 |
| 10.196258 | 1.0000000 | 0.0085332952 | 5.0000000 | 43.000000 |
| 23.327508 | 1.0000000 | 0.011307836 | 4.0000000 | 48.000000 |
| 30.530008 | 1.0000000 | 0.013138131 | 4.0000000 | 45.000000 |
| 33.387508 | 1.0000000 | 0.016045231 | 4.0000000 | 40.000000 |
| 39.857508 | 1.0000000 | 0.024680011 | 4.0000000 | 47.000000 |
| 50.453758 | 1.0000000 | 0.0091859917 | 5.0000000 | 44.000000 |
| 51.480255 | 1.0000000 | 4.5013929e-005 | 4.0000000 | 41.000000 |
| 71.462508 | 1.0000000 | 0.01182835 | 4.0000000 | 40.000000 |
| 74.348758 | 1.0000000 | 0.022949903 | 5.0000000 | 42.000000 |
| 77.218758 | 1.0000000 | 0.011344672 | 4.0000000 | 40.000000 |
| 81.345008 | 1.0000000 | 0.023733588 | 5.0000000 | 47.000000 |
| 96.093758 | 1.0000000 | 0.012333225 | 5.0000000 | 46.000000 |
| 110.73126 | 1.0000000 | 0.012853648 | 4.0000000 | 40.000000 |
| 120.53751 | 1.0000000 | 0.016397353 | 8.0000000 | 46.000000 |
| 121.41251 | 1.0000000 | 0.016891672 | 5.0000000 | 46.000000 |
| 122.98257 | 1.0000000 | 0.00011113866 | 5.0000000 | 41.000000 |
| 133.48626 | 1.0000000 | 0.01459633 | 4.0000000 | 45.000000 |
| 143.53751 | 1.0000000 | 0.015751098 | 5.0000000 | 46.000000 |
| 146.69501 | 1.0000000 | 0.024060124 | 7.0000000 | 47.000000 |
| 176.58491 | 1.0000000 | 7.6258776e-005 | 4.0000000 | 41.000000 |
| 177.63751 | 1.0000000 | 0.012813379 | 4.0000000 | 46.000000 |
| 186.67376 | 1.0000000 | 0.026460378 | 7.0000000 | 42.000000 |
| 187.23751 | 1.0000000 | 0.015835672 | 4.0000000 | 40.000000 |
| 195.57376 | 1.0000000 | 0.023554253 | 4.0000000 | 42.000000 |
| 198.48334 | 1.0000000 | 0.00022229966 | 7.0000000 | 41.000000 |
| 198.53126 | 1.0000000 | 0.014243521 | 7.0000000 | 40.000000 |
| 229.78126 | 1.0000000 | 0.015786803 | 4.0000000 | 46.000000 |
| 238.35626 | 1.0000000 | 0.014753305 | 5.0000000 | 46.000000 |
| 258.63001 | 1.0000000 | 0.025224516 | 4.0000000 | 42.000000 |
| 261.39626 | 1.0000000 | 0.011532493 | 5.0000000 | 48.000000 |
| 269.08501 | 1.0000000 | 0.011508758 | 7.0000000 | 44.000000 |
| 271.26501 | 1.0000000 | 0.010775427 | 4.0000000 | 48.000000 |
| 276.69376 | 1.0000000 | 0.014124605 | 7.0000000 | 40.000000 |
| 294.97751 | 1.0000000 | 0.011073575 | 4.0000000 | 43.000000 |
| 314.16251 | 1.0000000 | 0.011813013 | 4.0000000 | 46.000000 |
| 314.98001 | 1.0000000 | 0.013691477 | 4.0000000 | 45.000000 |
| 319.26376 | 1.0000000 | 0.022332449 | 4.0000000 | 47.000000 |
| 321.43876 | 1.0000000 | 0.023489629 | 5.0000000 | 47.000000 |
| 328.29126 | 1.0000000 | 0.0097243008 | 7.0000000 | 44.000000 |
| 340.98501 | 1.0000000 | 0.011763609 | 4.0000000 | 44.000000 |
| 354.22876 | 1.0000000 | 0.010940434 | 4.0000000 | 44.000000 |
| 384.98501 | 1.0000000 | 0.012153898 | 5.0000000 | 44.000000 |
| 395.52626 | 1.0000000 | 0.020160424 | 4.0000000 | 47.000000 |
| 399.18751 | 1.0000000 | 0.01351857 | 6.0000000 | 40.000000 |
| 412.55876 | 1.0000000 | 0.0081972858 | 5.0000000 | 48.000000 |
| 414.60876 | 1.0000000 | 0.010620404 | 4.0000000 | 48.000000 |
| 425.16126 | 1.0000000 | 0.028218202 | 7.0000000 | 42.000000 |
| 437.16626 | 1.0000000 | 0.0098215147 | 5.0000000 | 44.000000 |
| 441.02751 | 1.0000000 | 0.0076066983 | 5.0000000 | 48.000000 |
| 456.63376 | 1.0000000 | 0.013436728 | 4.0000000 | 48.000000 |
| 464.78126 | 1.0000000 | 0.01157381 | 7.0000000 | 46.000000 |
| 466.48751 | 1.0000000 | 0.017456743 | 4.0000000 | 40.000000 |
| 513.90126 | 1.0000000 | 0.022587616 | 4.0000000 | 47.000000 |
| 536.76251 | 1.0000000 | 0.014341519 | 5.0000000 | 40.000000 |
| 537.03001 | 1.0000000 | 0.01255086 | 4.0000000 | 45.000000 |
| 557.44251 | 1.0000000 | 0.012903291 | 8.0000000 | 45.000000 |
| 573.58552 | 1.0000000 | 0.00015512923 | 5.0000000 | 41.000000 |
| 573.75422 | 1.0000000 | 0.00013397341 | 5.0000000 | 41.000000 |
| 601.95876 | 1.0000000 | 0.0099397008 | 4.0000000 | 43.000000 |
| 609.27251 | 1.0000000 | 0.014091453 | 5.0000000 | 44.000000 |
| 613.26251 | 1.0000000 | 0.016208097 | 4.0000000 | 40.000000 |
| 616.71251 | 1.0000000 | 0.011916181 | 4.0000000 | 40.000000 |
| 664.03876 | 1.0000000 | 0.022031996 | 7.0000000 | 47.000000 |
| 671.86501 | 1.0000000 | 0.011271477 | 4.0000000 | 48.000000 |
| 675.19251 | 1.0000000 | 0.028315586 | 4.0000000 | 42.000000 |
| 692.57906 | 1.0000000 | 6.0056225e-005 | 4.0000000 | 41.000000 |
| 700.96376 | 1.0000000 | 0.023677745 | 5.0000000 | 47.000000 |
| 712.83626 | 1.0000000 | 0.015861797 | 5.0000000 | 45.000000 |

| | | | | |
|---|---|---|---|---|
| 715.40001 | 1.0000000 | 0.016283562 | 4.0000000 | 46.000000 |
| 727.11874 | 1.0000000 | 0.0014508203 | 8.0000000 | 41.000000 |
| 746.91626 | 1.0000000 | 0.0089332223 | 6.0000000 | 44.000000 |
| 747.29626 | 1.0000000 | 0.010704865 | 4.0000000 | 43.000000 |
| 747.96376 | 1.0000000 | 0.020928438 | 7.0000000 | 47.000000 |
| 778.65001 | 1.0000000 | 0.011987368 | 4.0000000 | 40.000000 |
| 780.76126 | 1.0000000 | 0.011369586 | 6.0000000 | 45.000000 |
| 790.40876 | 1.0000000 | 0.012595717 | 7.0000000 | 43.000000 |
| 795.93751 | 1.0000000 | 0.015055411 | 7.0000000 | 46.000000 |
| 797.68126 | 1.0000000 | 0.016072413 | 4.0000000 | 40.000000 |
| 804.56001 | 1.0000000 | 0.011409083 | 4.0000000 | 44.000000 |
| 809.35501 | 1.0000000 | 0.015009456 | 7.0000000 | 45.000000 |
| 813.48626 | 1.0000000 | 0.03288737 | 8.0000000 | 42.000000 |
| 819.10501 | 1.0000000 | 0.010840034 | 4.0000000 | 45.000000 |
| 820.37501 | 1.0000000 | 0.01292923 | 4.0000000 | 40.000000 |
| 820.42225 | 1.0000000 | 3.0054368e-005 | 5.0000000 | 41.000000 |
| 820.46251 | 1.0000000 | 0.013302694 | 7.0000000 | 46.000000 |
| 826.24251 | 1.0000000 | 0.025956135 | 5.0000000 | 42.000000 |
| 869.31876 | 1.0000000 | 0.015120184 | 5.0000000 | 40.000000 |
| 881.26501 | 1.0000000 | 0.011618466 | 5.0000000 | 48.000000 |
| 887.41251 | 1.0000000 | 0.015467612 | 7.0000000 | 40.000000 |
| 923.45501 | 1.0000000 | 0.028736085 | 7.0000000 | 42.000000 |
| 926.23751 | 1.0000000 | 0.014535906 | 7.0000000 | 40.000000 |
| 965.27376 | 1.0000000 | 0.014745477 | 5.0000000 | 45.000000 |
| 984.03126 | 1.0000000 | 0.015035874 | 5.0000000 | 40.000000 |
| 985.26626 | 1.0000000 | 0.013941202 | 5.0000000 | 44.000000 |

Information                    **block number 77152**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 9.1397282 | 1.0000000 | 3.5192487e-005 | 4.0000000 | 44.000000 |
| 13.469912 | 1.0000000 | 0.00023501791 | 7.0000000 | 48.000000 |
| 29.193639 | 1.0000000 | 0.00016802504 | 7.0000000 | 46.000000 |
| 30.447508 | 1.0000000 | 0.01565413 | 4.0000000 | 5.0000000 |
| 33.520008 | 1.0000000 | 0.0098880763 | 4.0000000 | 41.000000 |
| 34.605008 | 1.0000000 | 0.024044359 | 4.0000000 | 18.000000 |
| 58.709467 | 1.0000000 | 6.7128632e-005 | 4.0000000 | 48.000000 |
| 92.808325 | 1.0000000 | 4.5158344e-005 | 4.0000000 | 44.000000 |
| 96.807508 | 1.0000000 | 0.0094505396 | 5.0000000 | 41.000000 |
| 104.74216 | 1.0000000 | 0.0002120644 | 5.0000000 | 46.000000 |
| 105.68117 | 1.0000000 | 0.00018753353 | 5.0000000 | 47.000000 |
| 127.52376 | 1.0000000 | 0.024627694 | 5.0000000 | 18.000000 |
| 131.14401 | 1.0000000 | 6.6516167e-005 | 4.0000000 | 43.000000 |
| 138.61741 | 1.0000000 | 0.000105508 | 5.0000000 | 47.000000 |
| 152.53251 | 1.0000000 | 0.011178014 | 7.0000000 | 41.000000 |
| 174.39501 | 1.0000000 | 0.0083955257 | 5.0000000 | 41.000000 |
| 177.25870 | 1.0000000 | 0.00012597935 | 5.0000000 | 43.000000 |
| 182.89872 | 1.0000000 | 5.9043398e-005 | 4.0000000 | 44.000000 |
| 188.93310 | 1.0000000 | 0.00098548703 | 8.0000000 | 46.000000 |
| 189.43001 | 1.0000000 | 0.025774416 | 5.0000000 | 18.000000 |
| 191.74772 | 1.0000000 | 5.8960545e-005 | 4.0000000 | 46.000000 |
| 192.64819 | 1.0000000 | 4.8702940e-005 | 4.0000000 | 46.000000 |
| 198.20126 | 1.0000000 | 0.020756387 | 4.0000000 | 31.000000 |
| 207.54388 | 1.0000000 | 0.0010167576 | 8.0000000 | 46.000000 |
| 214.32482 | 1.0000000 | 0.0010118908 | 8.0000000 | 44.000000 |
| 219.08751 | 1.0000000 | 0.015995831 | 4.0000000 | 42.000000 |
| 220.85294 | 1.0000000 | 0.00015471867 | 7.0000000 | 44.000000 |
| 222.20508 | 1.0000000 | 0.0001631773 | 5.0000000 | 40.000000 |
| 230.63327 | 1.0000000 | 8.1070322e-005 | 4.0000000 | 43.000000 |
| 243.93001 | 1.0000000 | 0.028293917 | 6.0000000 | 18.000000 |
| 246.95126 | 1.0000000 | 0.009898885 | 4.0000000 | 41.000000 |
| 253.23431 | 1.0000000 | 0.00015518445 | 5.0000000 | 46.000000 |
| 255.29754 | 1.0000000 | 9.0697781e-005 | 5.0000000 | 40.000000 |
| 263.98501 | 1.0000000 | 0.014698113 | 5.0000000 | 5.0000000 |
| 289.04406 | 1.0000000 | 0.00013745804 | 5.0000000 | 45.000000 |
| 289.30887 | 1.0000000 | 0.00023271726 | 7.0000000 | 46.000000 |
| 295.56876 | 1.0000000 | 0.01323797 | 4.0000000 | 42.000000 |
| 309.56126 | 1.0000000 | 0.026509487 | 4.0000000 | 18.000000 |
| 309.90531 | 1.0000000 | 9.9308578e-005 | 6.0000000 | 43.000000 |
| 311.09376 | 1.0000000 | 0.013343525 | 5.0000000 | 42.000000 |
| 322.74671 | 1.0000000 | 0.0010345837 | 8.0000000 | 40.000000 |
| 324.61455 | 1.0000000 | 8.5214126e-005 | 4.0000000 | 48.000000 |

193

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 337.36251 | 1.0000000 | 0.016035198 | 8.0000000 | 42.000000 |
| 343.96278 | 1.0000000 | 1.7256155e-005 | 4.0000000 | 45.000000 |
| 362.88251 | 1.0000000 | 0.0088507223 | 5.0000000 | 41.000000 |
| 377.88842 | 1.0000000 | 0.00015923588 | 5.0000000 | 44.000000 |
| 380.80126 | 1.0000000 | 0.024216168 | 6.0000000 | 31.000000 |
| 389.26292 | 1.0000000 | 1.0909091e-005 | 4.0000000 | 40.000000 |
| 425.40432 | 1.0000000 | 9.8813210e-005 | 5.0000000 | 44.000000 |
| 441.62001 | 1.0000000 | 0.011767756 | 5.0000000 | 41.000000 |
| 450.63692 | 1.0000000 | 0.00019380521 | 6.0000000 | 46.000000 |
| 476.24876 | 1.0000000 | 0.02763714 | 7.0000000 | 18.000000 |
| 494.38378 | 1.0000000 | 5.9539641e-005 | 4.0000000 | 43.000000 |
| 512.21321 | 1.0000000 | 4.2704406e-005 | 4.0000000 | 43.000000 |
| 547.54489 | 1.0000000 | 4.3511948e-005 | 4.0000000 | 45.000000 |
| 565.93232 | 1.0000000 | 0.00015069594 | 7.0000000 | 45.000000 |
| 569.41251 | 1.0000000 | 0.010799379 | 4.0000000 | 42.000000 |
| 578.57501 | 1.0000000 | 0.015049237 | 5.0000000 | 42.000000 |
| 579.57001 | 1.0000000 | 0.025829648 | 4.0000000 | 31.000000 |
| 589.59501 | 1.0000000 | 0.011334438 | 5.0000000 | 41.000000 |
| 591.99898 | 1.0000000 | 0.00025116217 | 7.0000000 | 47.000000 |
| 601.03899 | 1.0000000 | 4.2123705e-005 | 6.0000000 | 47.000000 |
| 609.56001 | 1.0000000 | 0.011735148 | 4.0000000 | 5.0000000 |
| 615.65873 | 1.0000000 | 0.00010220385 | 5.0000000 | 43.000000 |
| 620.17386 | 1.0000000 | 5.8450079e-005 | 4.0000000 | 46.000000 |
| 647.74251 | 1.0000000 | 0.025369275 | 4.0000000 | 18.000000 |
| 654.76411 | 1.0000000 | 7.5033124e-005 | 4.0000000 | 40.000000 |
| 658.47126 | 1.0000000 | 0.011433551 | 4.0000000 | 4.0000000 |
| 667.30626 | 1.0000000 | 0.036555086 | 4.0000000 | 22.000000 |
| 671.51732 | 1.0000000 | 0.00015900447 | 5.0000000 | 44.000000 |
| 678.70751 | 1.0000000 | 0.02447514 | 5.0000000 | 31.000000 |
| 679.53803 | 1.0000000 | 4.6280450e-005 | 4.0000000 | 47.000000 |
| 711.37432 | 1.0000000 | 9.0456596e-005 | 4.0000000 | 46.000000 |
| 715.28177 | 1.0000000 | 6.8467750e-005 | 4.0000000 | 47.000000 |
| 717.69229 | 1.0000000 | 0.00033763724 | 7.0000000 | 46.000000 |
| 749.34501 | 1.0000000 | 0.021156225 | 4.0000000 | 31.000000 |
| 778.26839 | 1.0000000 | 6.9183066e-005 | 4.0000000 | 44.000000 |
| 789.61876 | 1.0000000 | 0.035652189 | 5.0000000 | 22.000000 |
| 802.68251 | 1.0000000 | 0.021161415 | 6.0000000 | 31.000000 |
| 809.08712 | 1.0000000 | 2.8485125e-005 | 4.0000000 | 46.000000 |
| 812.95917 | 1.0000000 | 3.8951649e-005 | 4.0000000 | 46.000000 |
| 832.49783 | 1.0000000 | 7.8816026e-005 | 4.0000000 | 46.000000 |
| 839.61683 | 1.0000000 | 3.6758261e-005 | 5.0000000 | 48.000000 |
| 842.65850 | 1.0000000 | 5.6704584e-005 | 4.0000000 | 43.000000 |
| 851.67709 | 1.0000000 | 0.00021736763 | 5.0000000 | 48.000000 |
| 852.31751 | 1.0000000 | 0.027869263 | 6.0000000 | 18.000000 |
| 854.28251 | 1.0000000 | 0.023732698 | 5.0000000 | 31.000000 |
| 857.34030 | 1.0000000 | 7.1243534e-005 | 4.0000000 | 43.000000 |
| 872.59842 | 1.0000000 | 0.00013073741 | 5.0000000 | 43.000000 |
| 893.78072 | 1.0000000 | 0.00023629178 | 5.0000000 | 40.000000 |
| 915.59731 | 1.0000000 | 5.8541521e-005 | 4.0000000 | 47.000000 |
| 926.41876 | 1.0000000 | 0.015169888 | 7.0000000 | 42.000000 |
| 949.83126 | 1.0000000 | 0.010278809 | 4.0000000 | 42.000000 |
| 949.86070 | 1.0000000 | 7.6363636e-006 | 6.0000000 | 40.000000 |
| 977.57819 | 1.0000000 | 0.00015983451 | 7.0000000 | 43.000000 |

Information   **block number 83021**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 7.3178612 | 1.0000000 | 0.00026417613 | 5.0000000 | 17.000000 |
| 10.205012 | 1.0000000 | 0.017287295 | 4.0000000 | 5.0000000 |
| 23.316502 | 1.0000000 | 0.00030234537 | 5.0000000 | 17.000000 |
| 30.517197 | 1.0000000 | 0.00032726669 | 6.0000000 | 16.000000 |
| 33.398762 | 1.0000000 | 0.027299231 | 6.0000000 | 4.0000000 |
| 39.833824 | 1.0000000 | 0.00099676327 | 4.0000000 | 17.000000 |
| 50.461262 | 1.0000000 | 0.016689992 | 4.0000000 | 5.0000000 |
| 51.505012 | 1.0000000 | 0.024801431 | 4.0000000 | 4.0000000 |
| 71.480012 | 1.0000000 | 0.02933235 | 7.0000000 | 4.0000000 |
| 74.342512 | 1.0000000 | 0.016703903 | 4.0000000 | 5.0000000 |
| 77.236262 | 1.0000000 | 0.028848672 | 4.0000000 | 4.0000000 |
| 81.321331 | 1.0000000 | 5.6952565e-005 | 4.0000000 | 17.000000 |
| 96.081652 | 1.0000000 | 0.00022717406 | 7.0000000 | 16.000000 |
| 110.74251 | 1.0000000 | 0.024107648 | 6.0000000 | 4.0000000 |
| 120.52121 | 1.0000000 | 0.00010201134 | 4.0000000 | 16.000000 |

| | | | | |
|---|---|---|---|---|
| 121.39589 | 1.0000000 | 0.00026947983 | 4.0000000 | 16.000000 |
| 123.01126 | 1.0000000 | 0.028799217 | 7.0000000 | 4.0000000 |
| 133.47185 | 1.0000000 | 0.00018994158 | 4.0000000 | 16.000000 |
| 143.52205 | 1.0000000 | 0.00029736263 | 5.0000000 | 16.000000 |
| 146.67103 | 1.0000000 | 8.3059914e-005 | 4.0000000 | 17.000000 |
| 176.61126 | 1.0000000 | 0.02642524 | 6.0000000 | 4.0000000 |
| 177.62494 | 1.0000000 | 0.00024870085 | 7.0000000 | 16.000000 |
| 186.66751 | 1.0000000 | 0.020210378 | 8.0000000 | 5.0000000 |
| 187.24876 | 1.0000000 | 0.027089672 | 5.0000000 | 4.0000000 |
| 195.56751 | 1.0000000 | 0.017308253 | 4.0000000 | 5.0000000 |
| 198.51126 | 1.0000000 | 0.028145049 | 6.0000000 | 4.0000000 |
| 198.54251 | 1.0000000 | 0.025497521 | 4.0000000 | 4.0000000 |
| 229.76575 | 1.0000000 | 0.00027797279 | 4.0000000 | 16.000000 |
| 238.34184 | 1.0000000 | 0.00033960391 | 4.0000000 | 16.000000 |
| 258.61751 | 1.0000000 | 0.012728516 | 4.0000000 | 5.0000000 |
| 261.38504 | 1.0000000 | 0.00031314113 | 7.0000000 | 17.000000 |
| 269.08626 | 1.0000000 | 0.012762758 | 5.0000000 | 5.0000000 |
| 271.25433 | 1.0000000 | 9.5791547e-005 | 4.0000000 | 17.000000 |
| 276.70501 | 1.0000000 | 0.025378605 | 5.0000000 | 4.0000000 |
| 294.98001 | 1.0000000 | 0.013577575 | 7.0000000 | 5.0000000 |
| 314.15088 | 1.0000000 | 0.00018744815 | 4.0000000 | 16.000000 |
| 314.96638 | 1.0000000 | 6.2608697e-005 | 4.0000000 | 16.000000 |
| 319.24171 | 1.0000000 | 0.00028184674 | 5.0000000 | 17.000000 |
| 321.41696 | 1.0000000 | 0.0016966425 | 4.0000000 | 17.000000 |
| 328.29876 | 1.0000000 | 0.017228301 | 4.0000000 | 5.0000000 |
| 340.98626 | 1.0000000 | 0.013017609 | 6.0000000 | 5.0000000 |
| 354.23001 | 1.0000000 | 0.012194434 | 5.0000000 | 5.0000000 |
| 384.98626 | 1.0000000 | 0.013407898 | 4.0000000 | 5.0000000 |
| 395.50619 | 1.0000000 | 9.0668268e-005 | 4.0000000 | 17.000000 |
| 399.19876 | 1.0000000 | 0.02477257 | 7.0000000 | 4.0000000 |
| 412.55077 | 1.0000000 | 0.00021019625 | 5.0000000 | 17.000000 |
| 414.59828 | 1.0000000 | 0.00013965377 | 5.0000000 | 17.000000 |
| 425.14876 | 1.0000000 | 0.015722202 | 4.0000000 | 5.0000000 |
| 437.17376 | 1.0000000 | 0.017325515 | 4.0000000 | 5.0000000 |
| 441.02006 | 1.0000000 | 0.00015793365 | 4.0000000 | 17.000000 |
| 456.62044 | 1.0000000 | 0.00011985027 | 4.0000000 | 17.000000 |
| 464.77008 | 1.0000000 | 0.00040066177 | 5.0000000 | 16.000000 |
| 466.49876 | 1.0000000 | 0.028710743 | 4.0000000 | 4.0000000 |
| 513.87963 | 1.0000000 | 0.00095580119 | 8.0000000 | 17.000000 |
| 536.77376 | 1.0000000 | 0.025595519 | 4.0000000 | 4.0000000 |
| 537.01779 | 1.0000000 | 0.00033628368 | 7.0000000 | 16.000000 |
| 557.43136 | 1.0000000 | 0.0017574278 | 5.0000000 | 16.000000 |
| 573.61126 | 1.0000000 | 0.025896752 | 4.0000000 | 4.0000000 |
| 573.78001 | 1.0000000 | 0.02592631 | 4.0000000 | 4.0000000 |
| 601.96126 | 1.0000000 | 0.012443701 | 5.0000000 | 5.0000000 |
| 609.27376 | 1.0000000 | 0.015345453 | 5.0000000 | 5.0000000 |
| 613.27376 | 1.0000000 | 0.027462097 | 4.0000000 | 4.0000000 |
| 616.73001 | 1.0000000 | 0.029420181 | 8.0000000 | 4.0000000 |
| 664.01717 | 1.0000000 | 0.00044924105 | 5.0000000 | 17.000000 |
| 671.85382 | 1.0000000 | 8.7284291e-005 | 4.0000000 | 17.000000 |
| 675.18001 | 1.0000000 | 0.015819586 | 4.0000000 | 5.0000000 |
| 692.60501 | 1.0000000 | 0.026014452 | 8.0000000 | 4.0000000 |
| 700.94035 | 1.0000000 | 0.00026729809 | 6.0000000 | 17.000000 |
| 712.82053 | 1.0000000 | 0.00013025982 | 4.0000000 | 16.000000 |
| 715.38499 | 1.0000000 | 0.0012652643 | 8.0000000 | 16.000000 |
| 727.14251 | 1.0000000 | 0.025218317 | 4.0000000 | 4.0000000 |
| 746.92376 | 1.0000000 | 0.016437222 | 5.0000000 | 5.0000000 |
| 747.29876 | 1.0000000 | 0.013208865 | 4.0000000 | 5.0000000 |
| 747.94298 | 1.0000000 | 0.0001530072 | 5.0000000 | 17.000000 |
| 778.66751 | 1.0000000 | 0.029491368 | 5.0000000 | 4.0000000 |
| 780.75013 | 1.0000000 | 0.00024119983 | 4.0000000 | 16.000000 |
| 790.41126 | 1.0000000 | 0.015099717 | 7.0000000 | 5.0000000 |
| 795.92261 | 1.0000000 | 0.0001571142 | 4.0000000 | 16.000000 |
| 797.69876 | 1.0000000 | 0.033572413 | 8.0000000 | 4.0000000 |
| 804.56751 | 1.0000000 | 0.018909083 | 8.0000000 | 5.0000000 |
| 809.34030 | 1.0000000 | 0.00030667154 | 8.0000000 | 16.000000 |
| 813.46751 | 1.0000000 | 0.01414137 | 5.0000000 | 5.0000000 |
| 819.09426 | 1.0000000 | 9.5842432e-005 | 4.0000000 | 16.000000 |
| 820.38626 | 1.0000000 | 0.02417923 | 6.0000000 | 4.0000000 |
| 820.44876 | 1.0000000 | 0.026537852 | 5.0000000 | 4.0000000 |
| 820.44955 | 1.0000000 | 0.00034018574 | 5.0000000 | 16.000000 |
| 826.23001 | 1.0000000 | 0.013460135 | 4.0000000 | 5.0000000 |

| | | | | |
|---|---|---|---|---|
| 869.33001 | 1.0000000 | 0.026374184 | 5.0000000 | 4.0000000 |
| 881.25367 | 1.0000000 | 0.00027609591 | 5.0000000 | 17.000000 |
| 887.42376 | 1.0000000 | 0.026721612 | 8.0000000 | 4.0000000 |
| 923.44251 | 1.0000000 | 0.016240085 | 4.0000000 | 5.0000000 |
| 926.24876 | 1.0000000 | 0.025789906 | 4.0000000 | 4.0000000 |
| 965.25946 | 1.0000000 | 0.00044756962 | 4.0000000 | 16.000000 |
| 984.04251 | 1.0000000 | 0.026289874 | 7.0000000 | 4.0000000 |
| 985.26751 | 1.0000000 | 0.015195202 | 7.0000000 | 5.0000000 |

Run 3 AP 1



Run 3 AP 4

197

Run 3 AP 5



Run 3 AP 9

198
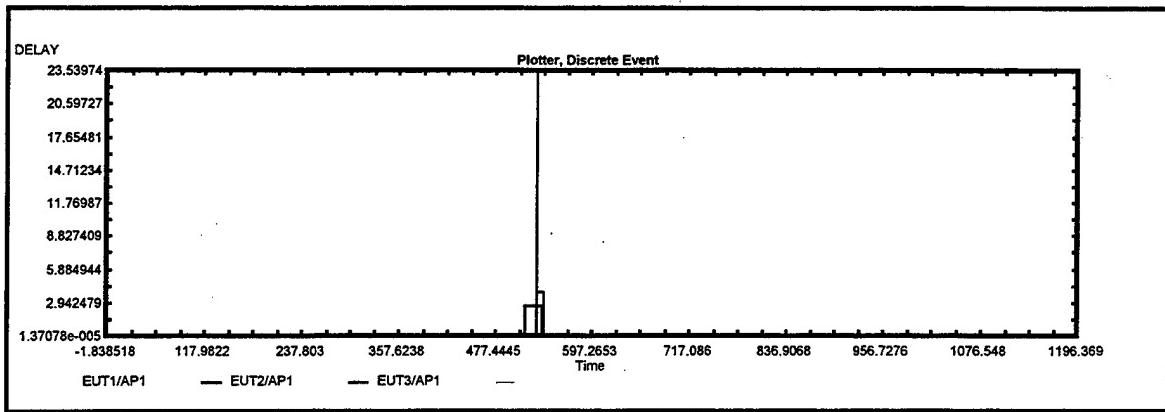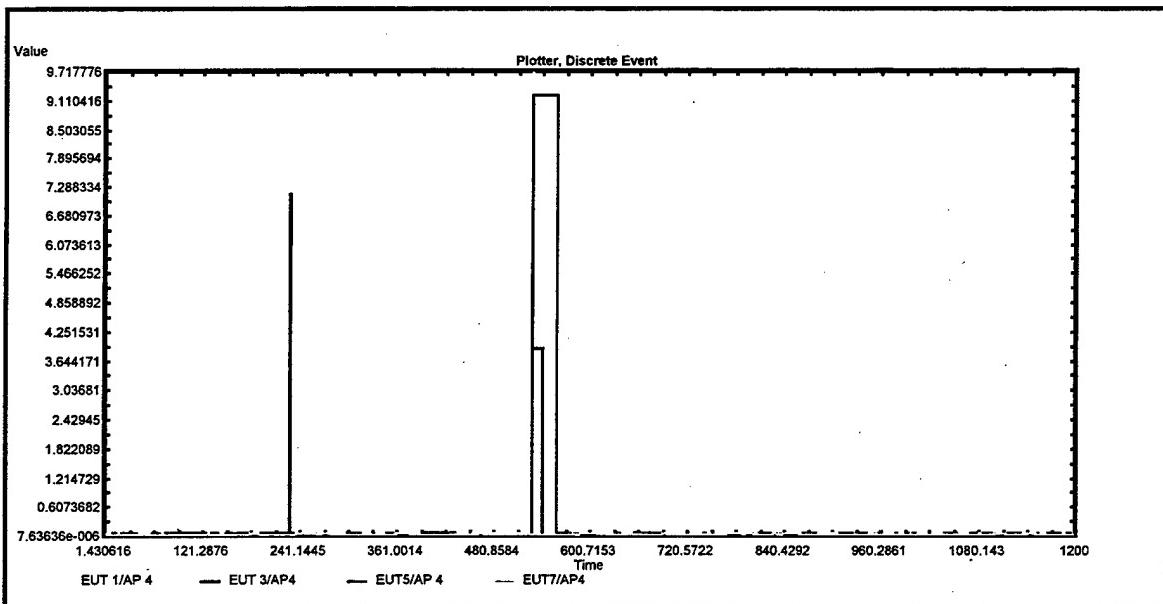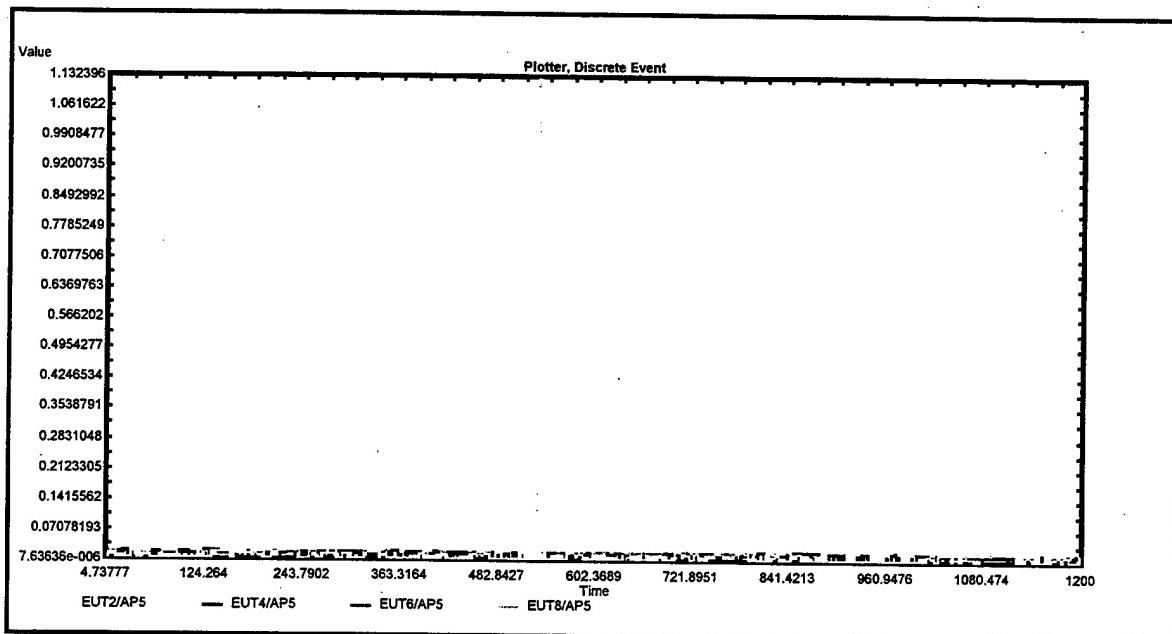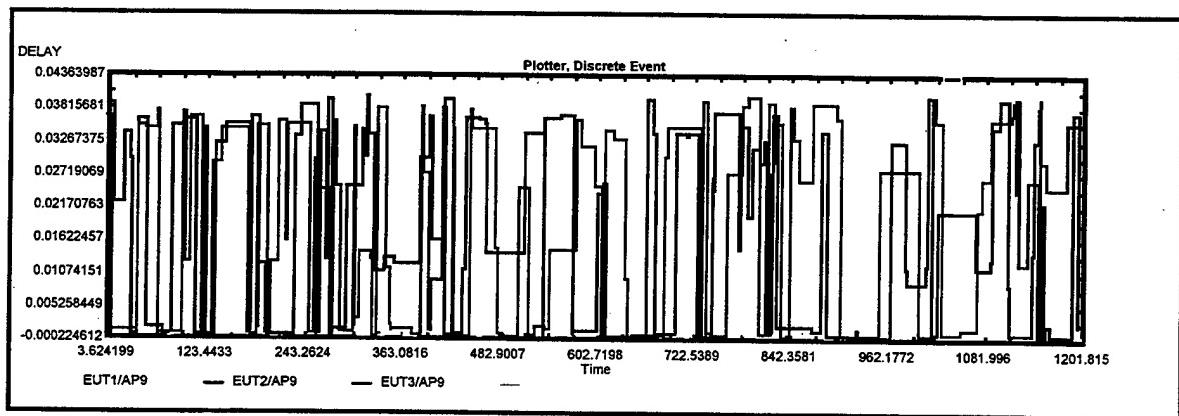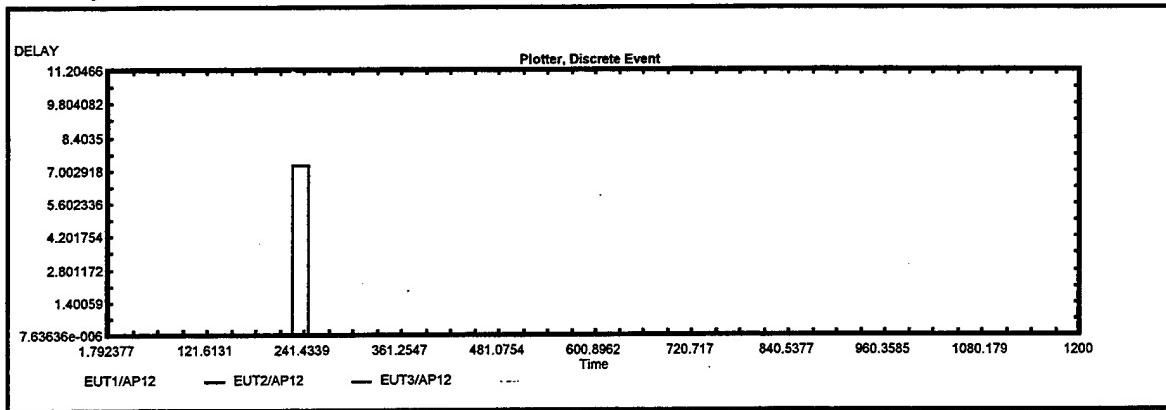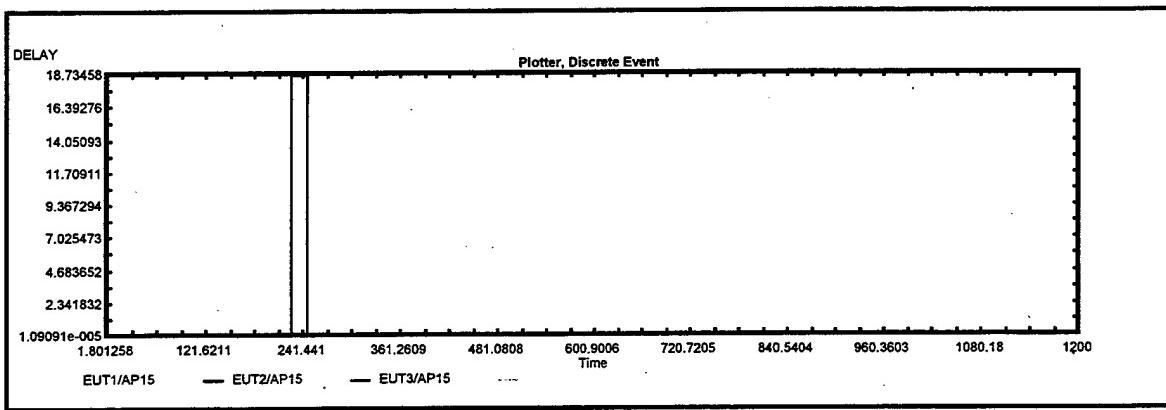
Run 3 AP 12



Run 3 AP 15
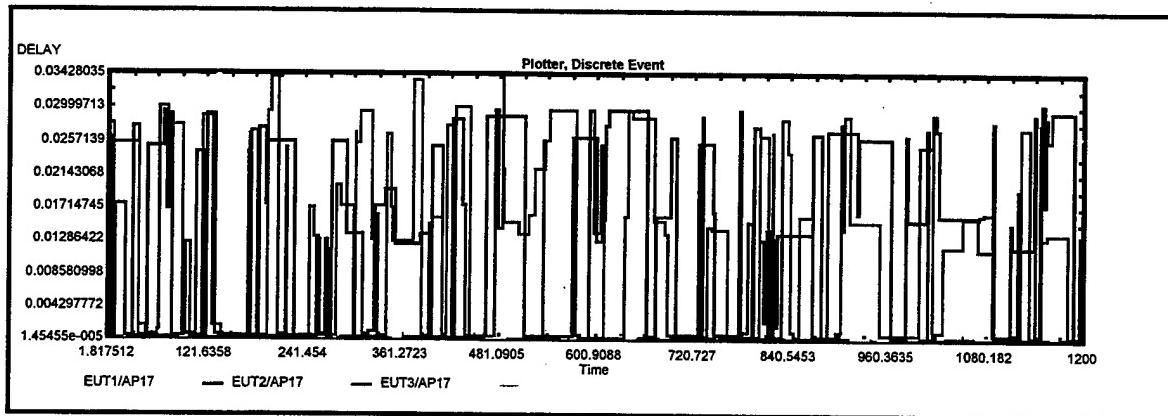
Run 3 AP 17
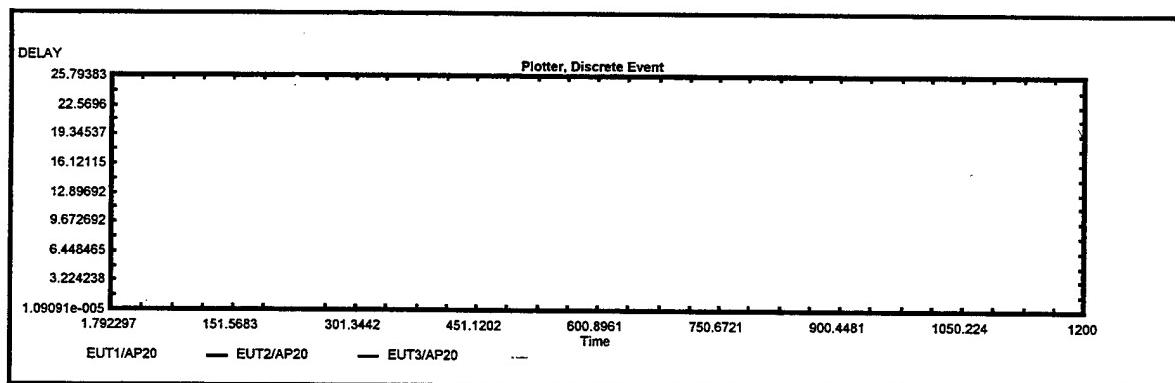


Run 3 AP 20
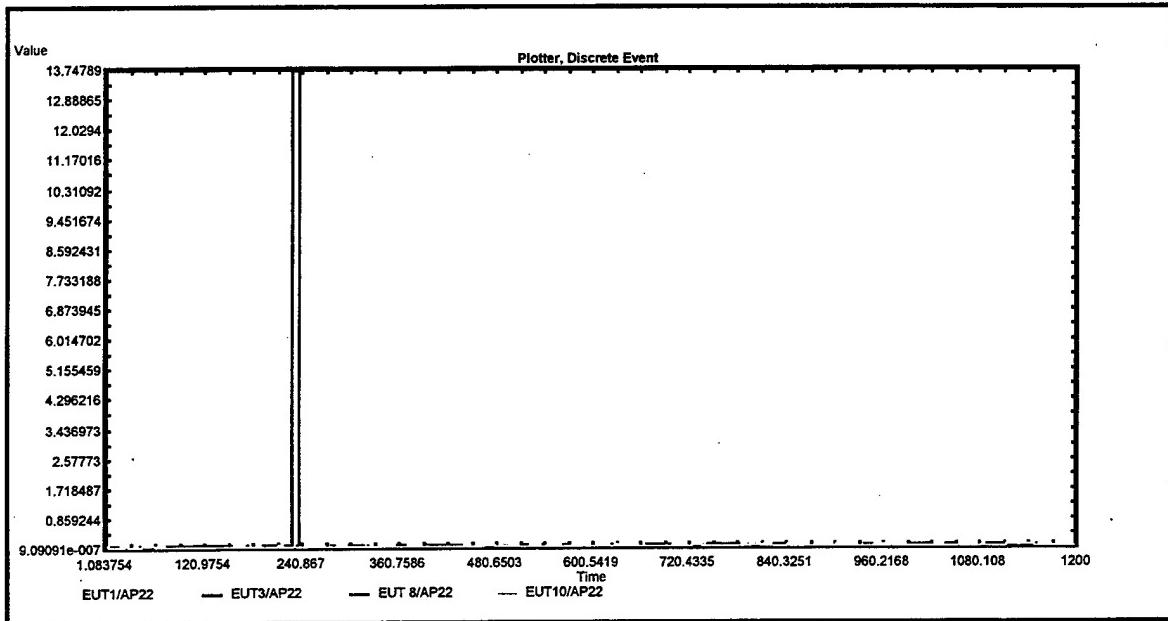
Run 3 AP 22



Run 3 AP 24

201
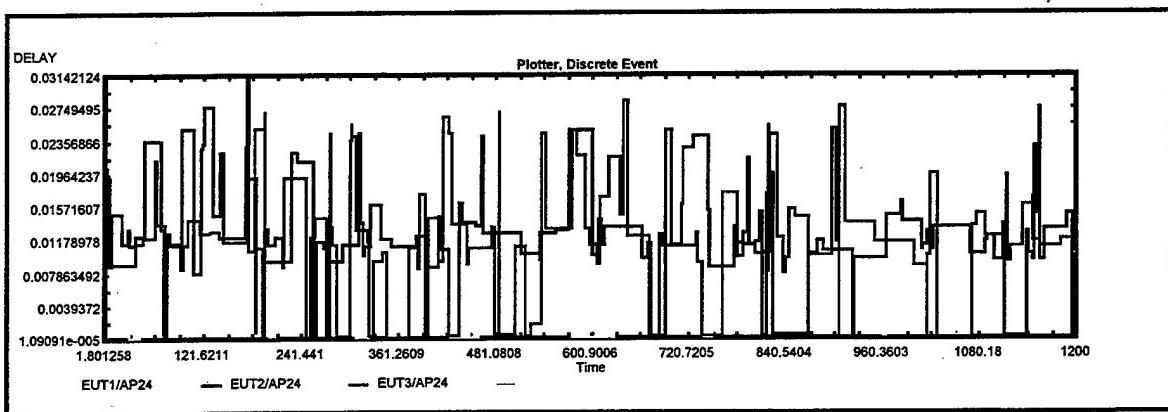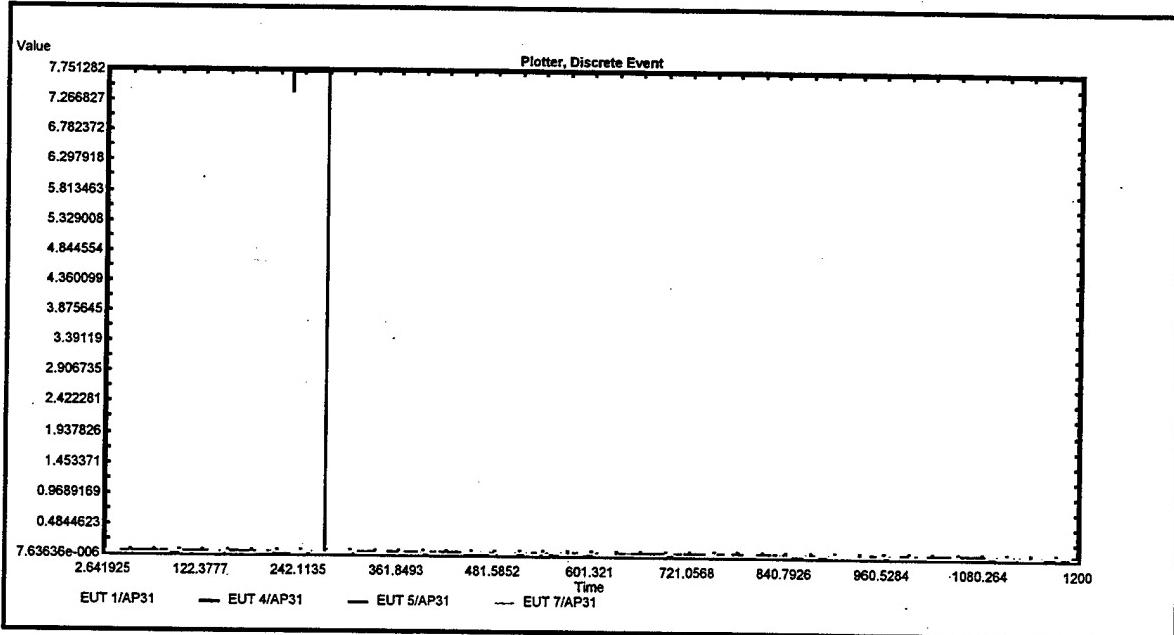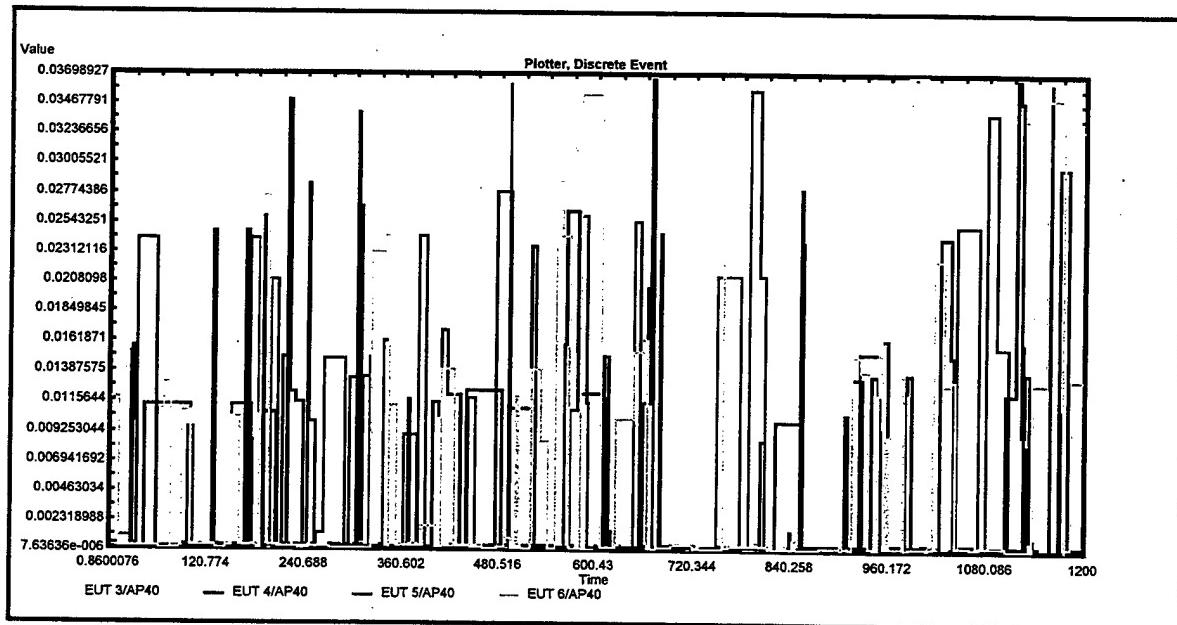
Run 3 AP 31



Run 3 AP 40
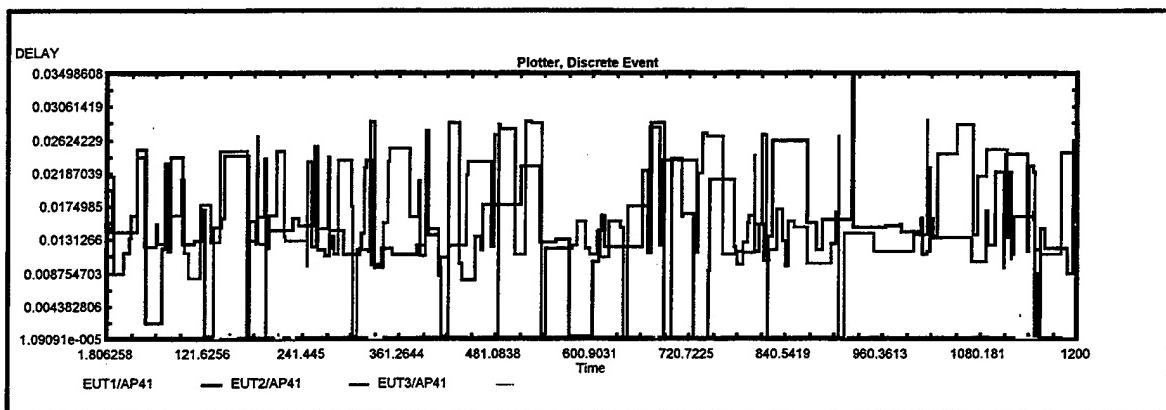
Run 3 AP 41

INFORMATION    RUN 3 VTC W/AP 5 AT 200 SEC AND AP 1 AT 500 SEC,    11MB

Information                          **block number 629**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginEUT |
|---|---|---|---|---|
| 908.06251 | 1.0000000 | 0.023754712 | 4.0000000 | 4.0000000 |
| 914.86876 | 1.0000000 | 0.022537955 | 4.0000000 | 4.0000000 |
| 951.14376 | 1.0000000 | 0.018947237 | 5.0000000 | 5.0000000 |
| 1001.1250 | 1.0000000 | 0.019863952 | 4.0000000 | 4.0000000 |
| 1016.4250 | 1.0000000 | 0.023703324 | 4.0000000 | 4.0000000 |
| 1017.2475 | 1.0000000 | 0.024839727 | 4.0000000 | 16.000000 |
| 1019.8500 | 1.0000000 | 0.019562191 | 5.0000000 | 5.0000000 |
| 1030.0875 | 1.0000000 | 0.01918273 | 5.0000000 | 4.0000000 |
| 1053.0250 | 1.0000000 | 0.02311871 | 4.0000000 | 4.0000000 |
| 1072.3563 | 1.0000000 | 0.023486261 | 5.0000000 | 4.0000000 |
| 1078.7250 | 1.0000000 | 0.02364979 | 4.0000000 | 4.0000000 |
| 1088.5688 | 1.0000000 | 0.023469842 | 5.0000000 | 5.0000000 |
| 1114.1500 | 1.0000000 | 0.019369077 | 4.0000000 | 5.0000000 |
| 1115.7000 | 1.0000000 | 0.020521551 | 4.0000000 | 5.0000000 |
| 1119.2563 | 1.0000000 | 0.026719894 | 8.0000000 | 4.0000000 |
| 1119.4413 | 1.0000000 | 0.02467242 | 5.0000000 | 16.000000 |
| 1124.5404 | 1.0000000 | 4.9533165e-005 | 4.0000000 | 1.0000000 |
| 1134.4875 | 1.0000000 | 0.023473052 | 4.0000000 | 5.0000000 |
| 1146.5470 | 1.0000000 | 4.0715178e-005 | 4.0000000 | 1.0000000 |
| 1147.2063 | 1.0000000 | 0.0290740 | 8.0000000 | 4.0000000 |
| 1148.3313 | 1.0000000 | 0.020420182 | 4.0000000 | 5.0000000 |
| 1156.7563 | 1.0000000 | 0.020967787 | 6.0000000 | 4.0000000 |
| 1182.2438 | 1.0000000 | 0.023045927 | 4.0000000 | 5.0000000 |

Information                          **block number 969**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginEUT |
|---|---|---|---|---|
| 945.74376 | 1.0000000 | 0.024613182 | 5.0000000 | 5.0000000 |
| 949.96876 | 1.0000000 | 0.02055387 | 4.0000000 | 5.0000000 |
| 962.31876 | 1.0000000 | 0.019989846 | 5.0000000 | 4.0000000 |
| 966.38751 | 1.0000000 | 0.019682362 | 5.0000000 | 5.0000000 |
| 978.18751 | 1.0000000 | 0.019437936 | 5.0000000 | 5.0000000 |
| 999.11876 | 1.0000000 | 0.032359972 | 8.0000000 | 4.0000000 |
| 1023.6975 | 1.0000000 | 0.028475423 | 8.0000000 | 17.000000 |
| 1029.4875 | 1.0000000 | 0.020136304 | 7.0000000 | 5.0000000 |
| 1050.4500 | 1.0000000 | 0.023233826 | 4.0000000 | 4.0000000 |
| 1069.0563 | 1.0000000 | 0.024759714 | 4.0000000 | 5.0000000 |
| 1082.2250 | 1.0000000 | 0.020320383 | 4.0000000 | 5.0000000 |
| 1083.9375 | 1.0000000 | 0.018887958 | 5.0000000 | 5.0000000 |
| 1087.3813 | 1.0000000 | 0.036576232 | 8.0000000 | 4.0000000 |
| 1089.8750 | 1.0000000 | 0.019536382 | 5.0000000 | 5.0000000 |
| 1090.8438 | 1.0000000 | 0.021107507 | 5.0000000 | 5.0000000 |
| 1103.1625 | 1.0000000 | 0.023173704 | 4.0000000 | 4.0000000 |
| 1110.4000 | 1.0000000 | 0.020762517 | 6.0000000 | 5.0000000 |
| 1111.2938 | 1.0000000 | 0.018807715 | 4.0000000 | 5.0000000 |
| 1116.3313 | 1.0000000 | 0.024350736 | 7.0000000 | 5.0000000 |
| 1117.8438 | 1.0000000 | 0.019766929 | 5.0000000 | 4.0000000 |
| 1127.0375 | 1.0000000 | 0.023303011 | 4.0000000 | 4.0000000 |
| 1151.3625 | 1.0000000 | 0.018980889 | 7.0000000 | 4.0000000 |
| 1161.4000 | 1.0000000 | 0.024698351 | 5.0000000 | 5.0000000 |
| 1168.7497 | 1.0000000 | 9.8520125e-005 | 5.0000000 | 1.0000000 |
| 1185.0188 | 1.0000000 | 0.024178656 | 7.0000000 | 4.0000000 |
| 1185.0688 | 1.0000000 | 0.020193356 | 4.0000000 | 4.0000000 |
| 1196.1813 | 1.0000000 | 0.021246683 | 5.0000000 | 4.0000000 |

Information                          **block number 4915**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginEUT |
|---|---|---|---|---|
| 1016.4275 | 1.0000000 | 0.026203324 | 7.0000000 | 31.000000 |
| 1019.8588 | 1.0000000 | 0.028312191 | 4.0000000 | 36.000000 |
| 1030.0963 | 1.0000000 | 0.02793273 | 4.0000000 | 31.000000 |
| 1053.0275 | 1.0000000 | 0.02561871 | 6.0000000 | 31.000000 |

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1072.3713 | 1.0000000 | 0.038486261 | 4.0000000 | 32.000000 |
| 1078.7275 | 1.0000000 | 0.02614979 | 8.0000000 | 34.000000 |
| 1114.1588 | 1.0000000 | 0.028119077 | 4.0000000 | 37.000000 |
| 1115.7088 | 1.0000000 | 0.029271551 | 5.0000000 | 38.000000 |
| 1119.2713 | 1.0000000 | 0.041719894 | 4.0000000 | 32.000000 |
| 1119.4463 | 1.0000000 | 0.02967242 | 4.0000000 | 38.000000 |
| 1124.5404 | 1.0000000 | 9.9129986e-005 | 5.0000000 | 19.000000 |
| 1134.4900 | 1.0000000 | 0.025973052 | 4.0000000 | 34.000000 |
| 1146.5471 | 1.0000000 | 0.0001718149 | 4.0000000 | 19.000000 |
| 1147.1780 | 1.0000000 | 0.00085583678 | 4.0000000 | 19.000000 |
| 1148.3400 | 1.0000000 | 0.029170182 | 4.0000000 | 34.000000 |
| 1156.7775 | 1.0000000 | 0.042217787 | 4.0000000 | 32.000000 |

Information      **block number 7542**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1117.4881 | 1.0000000 | 0.0013716273 | 8.0000000 | 5.0000000 |
| 1129.6438 | 1.0000000 | 0.014453914 | 5.0000000 | 22.000000 |
| 1137.5661 | 1.0000000 | 0.00044169365 | 8.0000000 | 4.0000000 |
| 1138.4265 | 1.0000000 | 5.3836959e-005 | 4.0000000 | 5.0000000 |
| 1139.7675 | 1.0000000 | 0.016219905 | 5.0000000 | 31.000000 |
| 1151.0863 | 1.0000000 | 0.00078305215 | 8.0000000 | 4.0000000 |
| 1160.9813 | 1.0000000 | 0.015274934 | 5.0000000 | 22.000000 |
| 1164.5375 | 1.0000000 | 0.010785986 | 4.0000000 | 22.000000 |

Information      **block number 9086**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1042.1584 | 1.0000000 | 0.00011805108 | 5.0000000 | 13.000000 |
| 1052.6750 | 1.0000000 | 0.013588828 | 4.0000000 | 14.000000 |
| 1069.3900 | 1.0000000 | 0.021502569 | 5.0000000 | 16.000000 |
| 1118.8624 | 1.0000000 | 8.7491736e-005 | 5.0000000 | 5.0000000 |
| 1138.8001 | 1.0000000 | 6.2119201e-005 | 4.0000000 | 13.000000 |
| 1156.3125 | 1.0000000 | 0.012145528 | 6.0000000 | 22.000000 |
| 1159.6525 | 1.0000000 | 0.030247941 | 8.0000000 | 17.000000 |
| 1175.2113 | 1.0000000 | 4.6509883e-005 | 4.0000000 | 5.0000000 |
| 1184.2846 | 1.0000000 | 3.6712925e-005 | 4.0000000 | 4.0000000 |

Information      **block number 11085**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 971.25626 | 1.0000000 | 0.016582431 | 6.0000000 | 18.000000 |
| 973.32280 | 1.0000000 | 4.8926147e-005 | 4.0000000 | 12.000000 |
| 974.16876 | 1.0000000 | 0.0099114921 | 4.0000000 | 40.000000 |
| 977.74139 | 1.0000000 | 6.0033166e-005 | 4.0000000 | 4.0000000 |
| 1000.9754 | 1.0000000 | 0.00010033996 | 7.0000000 | 4.0000000 |
| 1005.9619 | 1.0000000 | 0.00065645507 | 8.0000000 | 5.0000000 |
| 1020.6750 | 1.0000000 | 0.01057206 | 4.0000000 | 40.000000 |
| 1035.8394 | 1.0000000 | 4.8795840e-005 | 4.0000000 | 5.0000000 |
| 1050.3247 | 1.0000000 | 0.00023905527 | 7.0000000 | 13.000000 |
| 1053.0500 | 1.0000000 | 0.0094281418 | 8.0000000 | 22.000000 |
| 1080.3307 | 1.0000000 | 0.00011145002 | 8.0000000 | 4.0000000 |
| 1111.1250 | 1.0000000 | 0.010978299 | 5.0000000 | 40.000000 |
| 1111.8988 | 1.0000000 | 0.013559792 | 6.0000000 | 31.000000 |
| 1119.2611 | 1.0000000 | 6.8677839e-005 | 5.0000000 | 5.0000000 |
| 1133.1500 | 1.0000000 | 0.011700212 | 6.0000000 | 40.000000 |
| 1137.0411 | 1.0000000 | 9.1277616e-005 | 4.0000000 | 12.000000 |
| 1150.4202 | 1.0000000 | 8.9817089e-005 | 4.0000000 | 4.0000000 |
| 1178.8995 | 1.0000000 | 8.0630041e-005 | 4.0000000 | 5.0000000 |
| 1191.8438 | 1.0000000 | 0.011853957 | 4.0000000 | 14.000000 |
| 1195.0813 | 1.0000000 | 0.012703687 | 5.0000000 | 18.000000 |

Information      **block number 15600**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1100.8075 | 1.0000000 | 0.025184331 | 4.0000000 | 22.000000 |
| 1119.3888 | 1.0000000 | 0.012703511 | 4.0000000 | 5.0000000 |
| 1129.9829 | 1.0000000 | 7.2014111e-005 | 4.0000000 | 19.000000 |
| 1130.4321 | 1.0000000 | 0.00018801337 | 7.0000000 | 20.000000 |
| 1132.8520 | 1.0000000 | 0.00020160243 | 6.0000000 | 19.000000 |
| 1136.4244 | 1.0000000 | 0.00035569941 | 7.0000000 | 21.000000 |
| 1137.2013 | 1.0000000 | 0.031289642 | 8.0000000 | 22.000000 |

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1158.7449 | 1.0000000 | 0.00013696541 | 7.0000000 | 21.000000 |
| 1162.7321 | 1.0000000 | 5.4017867e-005 | 4.0000000 | 19.000000 |
| 1172.7032 | 1.0000000 | 0.00026582114 | 6.0000000 | 19.000000 |
| 1197.8906 | 1.0000000 | 0.00022957241 | 5.0000000 | 19.000000 |
| 1199.7436 | 1.0000000 | 5.2454463e-005 | 5.0000000 | 19.000000 |

Information        **block number 17386**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 945.74626 | 1.0000000 | 0.027113182 | 4.0000000 | 18.000000 |
| 949.97126 | 1.0000000 | 0.02305387 | 4.0000000 | 18.000000 |
| 962.29885 | 1.0000000 | 8.3129454e-005 | 5.0000000 | 14.000000 |
| 966.39001 | 1.0000000 | 0.022182362 | 4.0000000 | 18.000000 |
| 978.19126 | 1.0000000 | 0.023187936 | 7.0000000 | 22.000000 |
| 999.09626 | 1.0000000 | 0.0098599719 | 6.0000000 | 5.0000000 |
| 1023.7063 | 1.0000000 | 0.037225423 | 5.0000000 | 40.000000 |
| 1029.4913 | 1.0000000 | 0.023886304 | 5.0000000 | 22.000000 |
| 1050.4268 | 1.0000000 | 6.7719290e-005 | 4.0000000 | 14.000000 |
| 1069.0613 | 1.0000000 | 0.029759714 | 4.0000000 | 31.000000 |
| 1082.2288 | 1.0000000 | 0.024070383 | 5.0000000 | 22.000000 |
| 1083.9413 | 1.0000000 | 0.022637958 | 5.0000000 | 22.000000 |
| 1087.3450 | 1.0000000 | 0.00031701909 | 6.0000000 | 14.000000 |
| 1089.8800 | 1.0000000 | 0.024536382 | 4.0000000 | 31.000000 |
| 1090.8475 | 1.0000000 | 0.024857507 | 4.0000000 | 22.000000 |
| 1103.1525 | 1.0000000 | 0.013173704 | 4.0000000 | 5.0000000 |
| 1110.4150 | 1.0000000 | 0.035762517 | 4.0000000 | 17.000000 |
| 1111.3088 | 1.0000000 | 0.033807715 | 6.0000000 | 17.000000 |
| 1116.3338 | 1.0000000 | 0.026850736 | 4.0000000 | 18.000000 |
| 1117.8240 | 1.0000000 | 1.0909091e-005 | 5.0000000 | 15.000000 |
| 1127.0143 | 1.0000000 | 0.00012521423 | 5.0000000 | 14.000000 |
| 1151.3775 | 1.0000000 | 0.033980889 | 6.0000000 | 16.000000 |
| 1161.4050 | 1.0000000 | 0.029698351 | 4.0000000 | 31.000000 |
| 1168.7575 | 1.0000000 | 0.0078690306 | 4.0000000 | 4.0000000 |
| 1185.0088 | 1.0000000 | 0.014178656 | 6.0000000 | 5.0000000 |
| 1185.0486 | 1.0000000 | 4.8579813e-005 | 4.0000000 | 14.000000 |
| 1196.1713 | 1.0000000 | 0.011246683 | 7.0000000 | 5.0000000 |

Information        **block number 17880**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2750 | 1.0000000 | 0.018780819 | 4.0000000 | 22.000000 |
| 1089.3546 | 1.0000000 | 0.0025206261 | 8.0000000 | 4.0000000 |
| 1091.2563 | 1.0000000 | 0.009707261 | 5.0000000 | 40.000000 |
| 1100.1063 | 1.0000000 | 0.0081165322 | 5.0000000 | 40.000000 |
| 1111.5750 | 1.0000000 | 0.013083599 | 7.0000000 | 40.000000 |
| 1111.8125 | 1.0000000 | 0.022368884 | 4.0000000 | 22.000000 |
| 1113.5562 | 1.0000000 | 0.00047293417 | 6.0000000 | 13.000000 |
| 1140.8574 | 1.0000000 | 0.00010369565 | 6.0000000 | 4.0000000 |
| 1141.7063 | 1.0000000 | 0.0088562152 | 4.0000000 | 40.000000 |
| 1148.1625 | 1.0000000 | 0.0081581207 | 4.0000000 | 40.000000 |
| 1148.9750 | 1.0000000 | 0.0085190932 | 5.0000000 | 40.000000 |
| 1149.7011 | 1.0000000 | 0.0013153173 | 6.0000000 | 12.000000 |
| 1152.0250 | 1.0000000 | 0.024780119 | 8.0000000 | 22.000000 |
| 1153.7828 | 1.0000000 | 8.1880616e-005 | 4.0000000 | 12.000000 |
| 1156.4608 | 1.0000000 | 0.00013322067 | 5.0000000 | 4.0000000 |
| 1162.4965 | 1.0000000 | 0.0020225691 | 8.0000000 | 5.0000000 |
| 1189.2125 | 1.0000000 | 0.012258218 | 4.0000000 | 40.000000 |
| 1196.5625 | 1.0000000 | 0.014611448 | 4.0000000 | 18.000000 |

Information        **block number 26376**
Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 949.98501 | 1.0000000 | 0.03680787 | 4.0000000 | 22.00000 |
| 962.29911 | 1.0000000 | 0.00033738666 | 5.0000000 | 10.000000 |
| 966.40376 | 1.0000000 | 0.035936362 | 5.0000000 | 22.000000 |
| 978.20501 | 1.0000000 | 0.036941936 | 7.0000000 | 31.000000 |
| 999.08660 | 1.0000000 | 0.00019923884 | 4.0000000 | 7.0000000 |
| 1023.7063 | 1.0000000 | 0.037225423 | 5.0000000 | 40.000000 |
| 1029.5113 | 1.0000000 | 0.043886304 | 8.0000000 | 31.000000 |
| 1050.4271 | 1.0000000 | 0.00035938744 | 5.0000000 | 9.0000000 |
| 1069.0688 | 1.0000000 | 0.037267714 | 8.0000000 | 40.000000 |
| 1082.2413 | 1.0000000 | 0.036574383 | 4.0000000 | 22.000000 |

| 1083.9538 | 1.0000000 | 0.035141958 | 5.0000000 | 22.000000 |
| 1087.3449 | 1.0000000 | 0.00020239985 | 4.0000000 | 9.0000000 |
| 1089.8925 | 1.0000000 | 0.037040382 | 4.0000000 | 31.000000 |
| 1090.8600 | 1.0000000 | 0.037361507 | 5.0000000 | 22.000000 |
| 1110.4088 | 1.0000000 | 0.029516517 | 5.0000000 | 18.000000 |
| 1111.3025 | 1.0000000 | 0.027557715 | 7.0000000 | 18.000000 |
| 1116.3338 | 1.0000000 | 0.026850736 | 4.0000000 | 18.000000 |
| 1117.8475 | 1.0000000 | 0.023516929 | 4.0000000 | 12.000000 |
| 1127.0145 | 1.0000000 | 0.00031455166 | 5.0000000 | 9.0000000 |
| 1151.3550 | 1.0000000 | 0.011496889 | 4.0000000 | 13.000000 |
| 1161.4125 | 1.0000000 | 0.037198351 | 4.0000000 | 40.000000 |
| 1168.7499 | 1.0000000 | 0.00025551882 | 7.0000000 | 6.0000000 |
| 1184.9948 | 1.0000000 | 0.0002565001 | 4.0000000 | 7.0000000 |
| 1185.0488 | 1.0000000 | 0.00027812143 | 4.0000000 | 9.0000000 |
| 1196.1602 | 1.0000000 | 0.00023482672 | 5.0000000 | 7.0000000 |

Information      **block number 38893**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 914.86001 | 1.0000000 | 0.013787955 | 5.0000000 | 26.000000 |
| 951.13626 | 1.0000000 | 0.011447237 | 4.0000000 | 27.000000 |
| 1001.1138 | 1.0000000 | 0.0086139521 | 7.0000000 | 22.000000 |
| 1016.4016 | 1.0000000 | 0.00025684 | 6.0000000 | 24.000000 |
| 1017.2325 | 1.0000000 | 0.0098397269 | 4.0000000 | 29.000000 |
| 1019.8500 | 1.0000000 | 0.019562191 | 8.0000000 | 28.000000 |
| 1030.0684 | 1.0000000 | 6.9018239e-005 | 6.0000000 | 24.000000 |
| 1053.0020 | 1.0000000 | 6.2194530e-005 | 4.0000000 | 24.000000 |
| 1072.3463 | 1.0000000 | 0.013486261 | 4.0000000 | 25.000000 |
| 1078.7163 | 1.0000000 | 0.01489979 | 4.0000000 | 26.000000 |
| 1088.5575 | 1.0000000 | 0.012219842 | 5.0000000 | 29.000000 |
| 1114.1500 | 1.0000000 | 0.019369077 | 6.0000000 | 28.000000 |
| 1115.6888 | 1.0000000 | 0.0092715514 | 6.0000000 | 29.000000 |
| 1119.2400 | 1.0000000 | 0.010469894 | 8.0000000 | 25.000000 |
| 1119.4275 | 1.0000000 | 0.01092242 | 5.0000000 | 30.000000 |
| 1124.5513 | 1.0000000 | 0.010917731 | 4.0000000 | 22.000000 |
| 1134.4800 | 1.0000000 | 0.015973052 | 6.0000000 | 27.000000 |
| 1146.5638 | 1.0000000 | 0.016813842 | 8.0000000 | 22.000000 |
| 1147.1888 | 1.0000000 | 0.0115740 | 4.0000000 | 22.000000 |
| 1148.3225 | 1.0000000 | 0.011670182 | 4.0000000 | 26.000000 |
| 1156.7463 | 1.0000000 | 0.010967787 | 7.0000000 | 25.000000 |
| 1182.2325 | 1.0000000 | 0.011795927 | 4.0000000 | 29.000000 |

Information      **block number 43037**

Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 730.66501 | 1.0000000 | 0.014697005 | 4.0000000 | 4.0000000 |
| 740.82581 | 1.0000000 | 6.3448891e-005 | 4.0000000 | 28.000000 |
| 758.57141 | 1.0000000 | 4.6497891e-005 | 4.0000000 | 29.000000 |
| 764.28501 | 1.0000000 | 0.041227599 | 5.0000000 | 40.000000 |
| 769.28501 | 1.0000000 | 0.011579876 | 4.0000000 | 5.0000000 |
| 773.82786 | 1.0000000 | 3.9272178e-005 | 4.0000000 | 22.000000 |
| 774.14322 | 1.0000000 | 4.1325420e-005 | 4.0000000 | 28.000000 |
| 797.17586 | 1.0000000 | 0.0002410834 | 7.0000000 | 22.000000 |
| 823.16884 | 1.0000000 | 4.3521279e-005 | 4.0000000 | 28.000000 |
| 824.16984 | 1.0000000 | 7.1878654e-005 | 4.0000000 | 29.000000 |
| 828.83621 | 1.0000000 | 6.9339507e-005 | 4.0000000 | .27.000000 |
| 829.62679 | 1.0000000 | 1.0909091e-005 | 7.0000000 | 28.000000 |
| 829.92377 | 1.0000000 | 0.0001194895 | 7.0000000 | 27.000000 |
| 843.52478 | 1.0000000 | 0.00011910341 | 5.0000000 | 29.000000 |
| 844.47515 | 1.0000000 | 5.4358443e-005 | 4.0000000 | 29.000000 |
| 860.06251 | 1.0000000 | 0.012204692 | 4.0000000 | 23.000000 |
| 869.78917 | 1.0000000 | 7.8552221e-005 | 4.0000000 | 22.000000 |
| 878.33821 | 1.0000000 | 0.00028487866 | 7.0000000 | 26.000000 |
| 879.21589 | 1.0000000 | 7.8950590e-005 | 4.0000000 | 27.000000 |
| 911.75649 | 1.0000000 | 0.00089011092 | 8.0000000 | 25.000000 |
| 925.44126 | 1.0000000 | 0.010276098 | 4.0000000 | 5.0000000 |
| 938.75876 | 1.0000000 | 0.024244853 | 4.0000000 | 31.000000 |
| 948.18392 | 1.0000000 | 5.3725255e-005 | 4.0000000 | 22.000000 |
| 976.82796 | 1.0000000 | 0.00023280994 | 6.0000000 | 30.000000 |
| 995.51001 | 1.0000000 | 0.040035402 | 4.0000000 | 40.000000 |
| 1013.4417 | 1.0000000 | 5.6108747e-005 | 4.0000000 | 28.000000 |
| 1015.6596 | 1.0000000 | 4.3411376e-005 | 4.0000000 | 29.000000 |

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1027.0362 | 1.0000000 | 7.9173695e-005 | 4.0000000 | 22.000000 |
| 1052.1938 | 1.0000000 | 0.013578213 | 8.0000000 | 23.000000 |
| 1063.5775 | 1.0000000 | 0.0090201935 | 4.0000000 | 4.0000000 |
| 1069.5609 | 1.0000000 | 7.4179775e-005 | 4.0000000 | 26.000000 |
| 1090.6600 | 1.0000000 | 0.03869443 | 4.0000000 | 40.000000 |
| 1131.2425 | 1.0000000 | 9.7121226e-005 | 7.0000000 | 22.000000 |
| 1132.5363 | 1.0000000 | 0.027763838 | 5.0000000 | 18.000000 |
| 1136.4925 | 1.0000000 | 0.034792212 | 8.0000000 | 18.000000 |
| 1151.2479 | 1.0000000 | 0.00010774351 | 5.0000000 | 26.000000 |
| 1191.3587 | 1.0000000 | 6.3205810e-005 | 4.0000000 | 30.000000 |

Information          **block number 58438**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1078.0648 | 1.0000000 | 0.00030017185 | 5.0000000 | 39.000000 |
| 1089.9987 | 1.0000000 | 6.4441812e-005 | 4.0000000 | 36.000000 |
| 1110.2395 | 1.0000000 | 2.7320272e-005 | 4.0000000 | 34.000000 |
| 1181.2538 | 1.0000000 | 0.02636867 | 4.0000000 | 40.000000 |
| 1199.2000 | 1.0000000 | 0.016856264 | 4.0000000 | 32.000000 |

Information          **block number 69342**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2663 | 1.0000000 | 0.010030819 | 5.0000000 | 44.000000 |
| 1089.3688 | 1.0000000 | 0.016642722 | 4.0000000 | 40.000000 |
| 1091.2588 | 1.0000000 | 0.012207261 | 4.0000000 | 48.000000 |
| 1100.1200 | 1.0000000 | 0.021866532 | 4.0000000 | 47.000000 |
| 1111.5713 | 1.0000000 | 0.0093335986 | 7.0000000 | 48.000000 |
| 1111.8038 | 1.0000000 | 0.013618884 | 8.0000000 | 44.000000 |
| 1113.5800 | 1.0000000 | 0.024245808 | 6.0000000 | 42.000000 |
| 1140.8688 | 1.0000000 | 0.011438684 | 5.0000000 | 40.000000 |
| 1141.7200 | 1.0000000 | 0.022606215 | 5.0000000 | 47.000000 |
| 1148.1763 | 1.0000000 | 0.021908121 | 4.0000000 | 47.000000 |
| 1148.9775 | 1.0000000 | 0.011019093 | 5.0000000 | 48.000000 |
| 1149.6999 | 1.0000000 | 0.0001519218 | 5.0000000 | 41.000000 |
| 1152.0088 | 1.0000000 | 0.0085301191 | 4.0000000 | 43.000000 |
| 1153.7827 | 1.0000000 | 2.4704818e-005 | 4.0000000 | 41.000000 |
| 1156.4750 | 1.0000000 | 0.014375881 | 5.0000000 | 40.000000 |
| 1162.5063 | 1.0000000 | 0.011784526 | 6.0000000 | 40.000000 |
| 1189.2088 | 1.0000000 | 0.0085082185 | 4.0000000 | 48.000000 |
| 1196.5738 | 1.0000000 | 0.025861448 | 5.0000000 | 42.000000 |

Information          **block number 77152**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1079.9000 | 1.0000000 | 0.033739579 | 7.0000000 | 22.000000 |
| 1091.9913 | 1.0000000 | 0.016116216 | 6.0000000 | 5.0000000 |
| 1092.9938 | 1.0000000 | 0.015670321 | 5.0000000 | 42.000000 |
| 1107.1107 | 1.0000000 | 0.00023454533 | 5.0000000 | 44.000000 |
| 1112.0431 | 1.0000000 | 0.00028237514 | 6.0000000 | 45.000000 |
| 1125.1850 | 1.0000000 | 0.015943486 | 4.0000000 | 5.0000000 |
| 1125.6729 | 1.0000000 | 0.00027059711 | 5.0000000 | 44.000000 |
| 1128.8638 | 1.0000000 | 0.0081901577 | 4.0000000 | 41.000000 |
| 1135.6731 | 1.0000000 | 0.00022664199 | 6.0000000 | 40.000000 |
| 1142.9782 | 1.0000000 | 1.0909091e-005 | 7.0000000 | 48.000000 |
| 1171.0013 | 1.0000000 | 0.010955148 | 4.0000000 | 41.000000 |
| 1171.5025 | 1.0000000 | 0.00028951357 | 5.0000000 | 46.000000 |

Information          **block number 83021**
  Input Parameters:

| Arrival Time | Priority | time differe | COMMTYPE | OriginAP |
|---|---|---|---|---|
| 1070.2675 | 1.0000000 | 0.011284819 | 4.0000000 | 5.0000000 |
| 1089.3800 | 1.0000000 | 0.027896722 | 4.0000000 | 4.0000000 |
| 1091.2469 | 1.0000000 | 0.00035886293 | 4.0000000 | 17.000000 |
| 1100.0983 | 1.0000000 | 0.00011816729 | 4.0000000 | 17.000000 |
| 1111.5620 | 1.0000000 | 0.00011633489 | 4.0000000 | 17.000000 |
| 1111.8050 | 1.0000000 | 0.014872884 | 4.0000000 | 5.0000000 |
| 1113.5675 | 1.0000000 | 0.011749808 | 4.0000000 | 5.0000000 |
| 1140.8863 | 1.0000000 | 0.028942684 | 5.0000000 | 4.0000000 |
| 1141.6978 | 1.0000000 | 0.00037187083 | 5.0000000 | 17.000000 |
| 1148.1547 | 1.0000000 | 0.00033555211 | 5.0000000 | 17.000000 |
| 1148.9671 | 1.0000000 | 0.00060992786 | 6.0000000 | 17.000000 |

208

| | | | | |
|---|---|---|---|---|
| 1149.7300 | 1.0000000 | 0.030231738 | 8.0000000 | 4.0000000 |
| 1152.0175 | 1.0000000 | 0.017284119 | 7.0000000 | 5.0000000 |
| 1153.8113 | 1.0000000 | 0.028578272 | 4.0000000 | 4.0000000 |
| 1156.4863 | 1.0000000 | 0.025629881 | 4.0000000 | 4.0000000 |
| 1162.5238 | 1.0000000 | 0.029288526 | 4.0000000 | 4.0000000 |
| 1189.2004 | 1.0000000 | 0.00012367614 | 4.0000000 | 17.000000 |
| 1196.5613 | 1.0000000 | 0.013365448 | 4.0000000 | 5.0000000 |

Run 4 AP 1



Run 4 AP 2

210
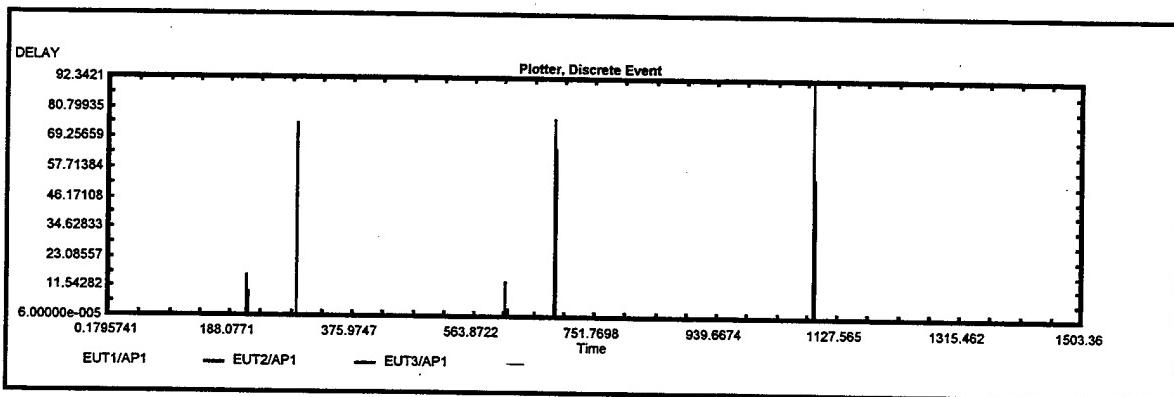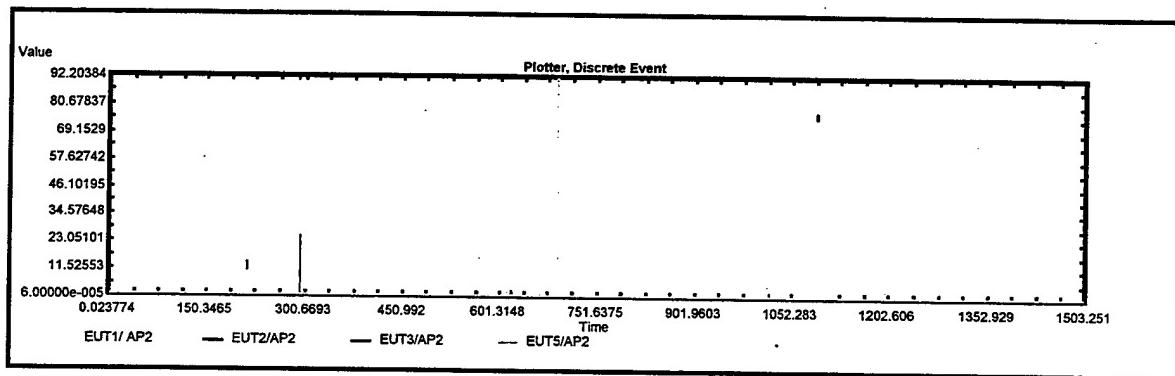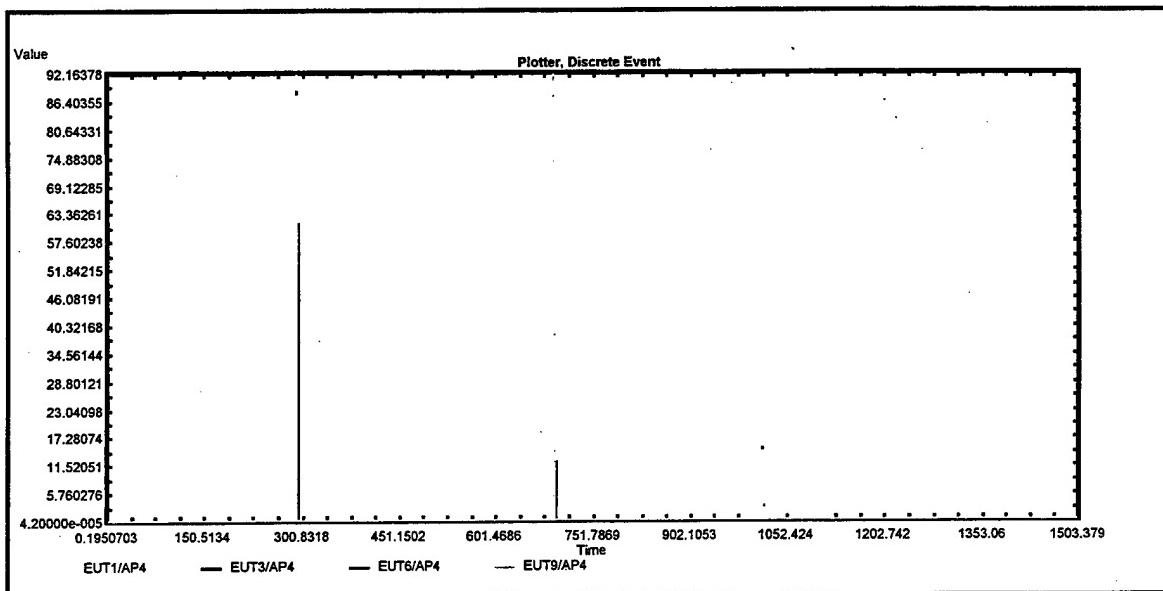
Run 4 AP 4
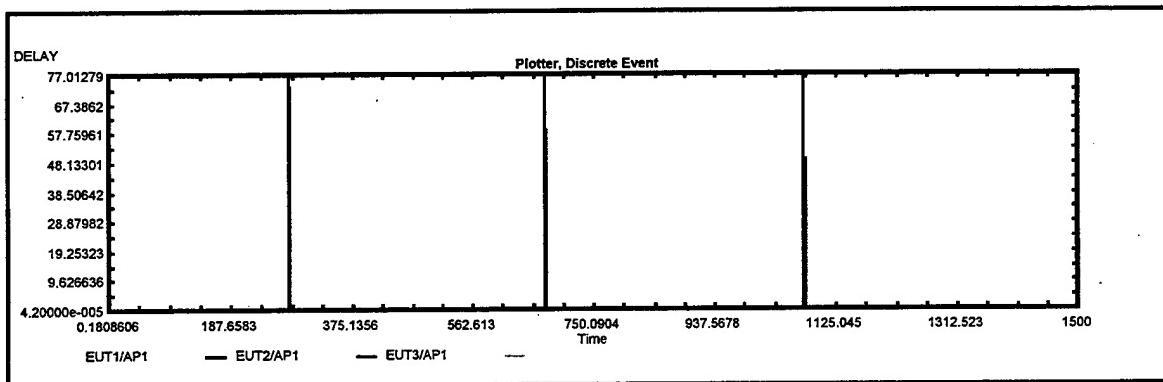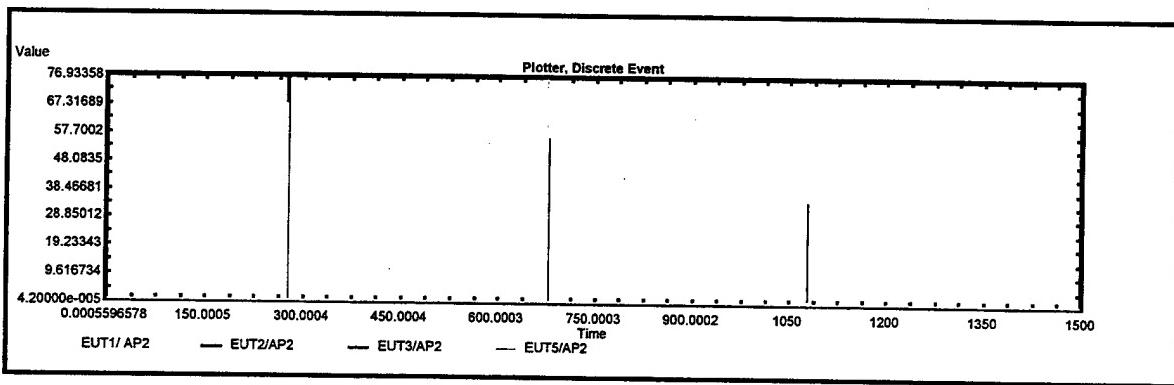


Run 5 AP 1

Run 5 AP 2
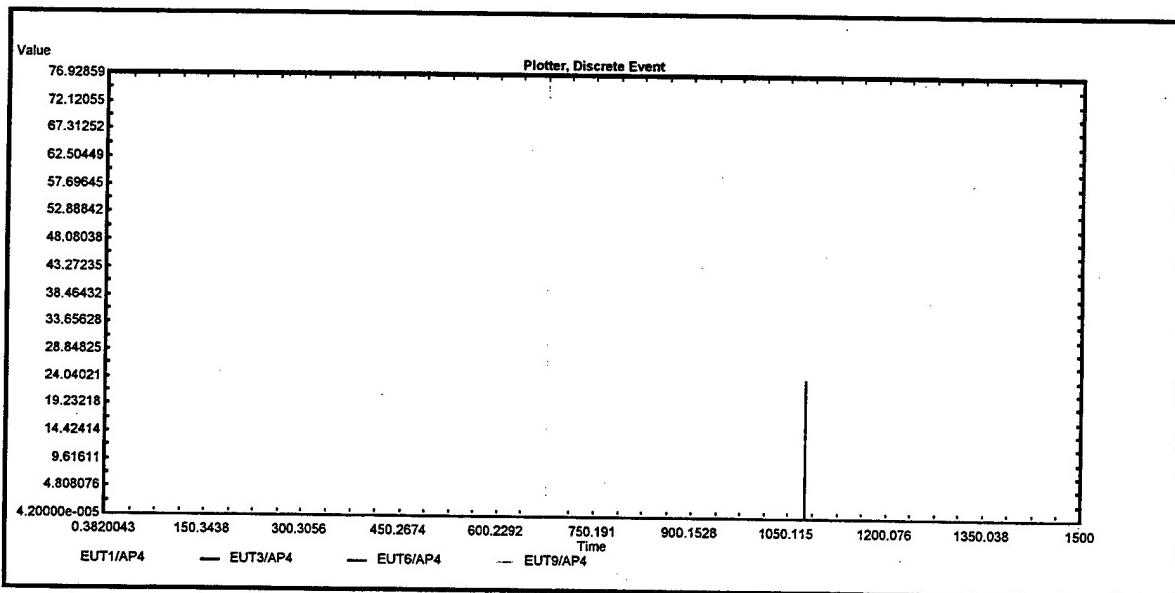


Run 5 AP 4

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